

ATTACHMENT A

McKesson
Chemical Operations
and Safety Manual

CHECK SHEET

Rev. #	<u>Issue Date</u>	<u>Initials</u>	Rev. #	<u>Issue Date</u>	<u>Initials</u>
1	<input checked="" type="checkbox"/> 3/14/86	MI	11	<input type="checkbox"/>	
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5	<input checked="" type="checkbox"/> 9-22-86	SMC	15	<input type="checkbox"/>	
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After revisions are filed, check box ☒, enter issue date and your initials. The cover letter (attached to each revision) should be filed behind this Check Sheet.

Dinah DeWitt

To
Holders of the Chemical
Operations & Safety Manual

Date
11 November 1985

From

Location/Tel.

McKesson
Intra Company
Correspondence

Dick A. Davis

Home Office Chemical

Subject

Copies To

CHEMICAL OPERATIONS
& SAFETY MANUAL

Home Office Vice Presidents
Regional Vice Presidents

Enclosed is a new McKesson Chemical Company Operations and Safety Manual. The manual has been completely revised and is the first complete revision since 1978. We hope you will find it useful. Please discard the old blue Chemical Group Operations Manual and replace it with this one.

Numerous sections and exhibits have been extensively modified, added, or deleted. A few of the more important revisions are as follows:

- 10.10 Added a Hazardous Waste Policy
- 10.90 Substantially revised the Service Center Safety and Compliance Review form
- 20.35 Deleted Code Labeling except under specified circumstances
- 30. Added various Transportation sections
- 40.75 Deleted DOE Building Energy Restrictions
- 90. Substantially revised Compressed Gas Repackaging Procedures
- 100. Expanded Government Regulations section

In an undertaking of this magnitude it is possible that we may have allowed either errors or omissions to be published in this manual. Please advise Marianne Domin, Operations Secretary at Home Office, of any such errors or omissions you may find. Revisions will be issued as necessary.

Dick A. Davis

Dick A. Davis

DAD:md
Enclosure

P.S. My personal thanks to all of the operations personnel involved in creating this completely updated manual.

McK00003

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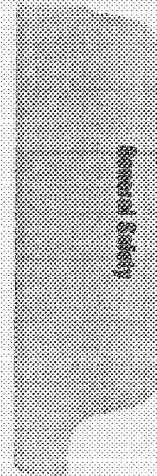
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GENERAL
SAFETY
POLICY

McKesson is committed to conducting our operations with the highest regard for safe and healthful working conditions for employees and for the protection of our customers and the general public. In these practices we will make every effort to comply with the letter and the spirit of existing governmental legislation and established regulations.

Accident prevention and efficient operations go hand in hand. Accidents drain both human and mechanical resources. All levels of management have a primary responsibility for the safety and well-being of all employees. Each employee has the responsibility to work safely. This responsibility can be met only by continually working to promote safe work practices among all employees and to maintain property and equipment in safe operating condition. That policy forms the foundation for the McKesson Chemical Group Safety Program.

OBJECTIVES

1. Avoid personal injury and protect the Company's number one asset...its people.
2. Comply with all Federal, State and Municipal safety laws and ordinances.
3. Protect the Company's physical assets.

IMPLEMEN-
TATION

Total safety is accomplished by a sincere and constant cooperative spirit among all employees. The policy is implemented through these vital areas.

1. Development and application of safety standards both for production facilities (equipment, tools, work methods, and guarding), and for products, based on applicable legal and voluntary codes, rules, and recognized industry standards as a minimum.
2. An active Safety Committee meeting at periodic intervals.
3. Safety Meetings conducted monthly.

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IMPLEMEN-
TATION
(Cont.)

4. Education and training in general safety principles and specific techniques appropriate to employees' normal duties.
5. Protective equipment to provide injury protection.
6. Audits of operating locations carried out by properly trained personnel to assure a safe and healthful physical environment.
7. Accident investigations to identify the causes of accidents and apply corrective action to eliminate or reduce accident-causing problems.
8. Industrial hygiene studies to identify potential health hazards and develop necessary control measures.
9. Accident records and accident-cause analysis to determine accident trends and provide targets for corrective action.
10. Safety publicity and promotion to increase program interest and participation.
11. Off-the-job accident prevention in cooperation with public and private agencies to promote the application of accident prevention to non-work activities.
12. Emergency Evacuation Drill conducted semi-annually.

RESPONSI-
BILITY

Line management is responsible for the successful implementation of our Safety Program, with assistance and support from staff personnel expected. Each operating region, beginning with the Regional Vice President, bears the responsibility for good safety performance. Area and Service Center Managers, as well as all supervisory personnel, share in this responsibility.

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RESPONSI-
BILITY
(Cont.)

The Company Loss and Safety Coordinator, responsible for administering this Safety Program, is the Vice President, Operations, who reports to the Vice President and General Manager.

The Regional Loss and Safety Coordinator, responsible for administering and monitoring safety programs as prescribed by the Company, is the Regional Operations and Safety Manager who reports to the Regional Vice President.

Service Center Management and Supervisors are responsible for developing the proper attitudes toward safety and health in themselves and in those they supervise and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved.

Employees are responsible for wholehearted, genuine cooperation with all aspects of the Safety Program, including: compliance with all applicable rules and regulations, and continuously practicing safety while performing their duties.

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GENERAL

The following functions and procedures are basic elements of a facilities safety program commensurate with the criteria outlined in the McKesson Chemical Company Accident & Loss Prevention Policy, Ref. 10.05.

SAFETY
COMMITTEE

Each chemical facility shall organize a Safety Committee. The Committee is to meet at periodic intervals and maintain recorded minutes which will be available for inspection and review by internal safety audits, OSHA, or insurance inspectors.

Purpose of Safety Committee

The purpose is to respond to the objectives set forth in the McKesson Chemical Safety Policy:

1. To serve in planning the unit's Safety Program; to take a leading role in making the program operate successfully; to influence others to work safely.
2. To assist and advise the facility manager in taking effective remedial measures that will control or eliminate accidents.
3. To ensure accident-free operation through constant monitoring of conditions, preventive maintenance, and the establishment of safe standard operating procedures.
4. To ensure that the safety and health policy is communicated to every employee, and that that policy is effectively implemented.
5. To ensure compliance with Federal, State and Local Safety Regulations.

Organization of Safety Committee

The Safety Committee should include all members of local management and supervision, as well as representatives from the warehouse, sales force, repack, driver, and office personnel. Membership will vary depending on the number of employees at a given location.

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SAFETY
COMMITTEE
(Cont.)

Frequency of Safety Committee Meetings

Meetings are to be held on a periodic basis, and at least once a month. Duration of meetings may vary from 15 minutes to a couple of hours depending on need. Most meetings should be short and adhere strictly to safety discussion.

Functions of Safety Committee

The duties of the Safety Committee are to coordinate all facets of safety and health.

1. Establish procedures for handling suggestions and recommendations of the committee. Prepare minutes of safety meetings. (See suggested report form, Exhibit 1, at the end of this section.)
2. Review and analyze data on current accidents (including all vehicle accidents) and devise methods, procedures, and changes to prevent their recurrence. This includes non-serious accidents or near accidents.
3. Establish provisions for regular periodic and meaningful inspections; review results and recommend indicated changes. Identify hazards.
4. Promote and monitor the establishment of a regular program of job hazard analysis and the setting up of safe standard operating procedures.
5. Study and recommend adoption of or changes to procedures pertaining to the use of protective equipment or devices for the elimination or control of hazards.
6. Establish a system of follow-ups and deadlines on all recommendations of the committee to see that compliance is achieved.
7. Communicate new safety ideas to Regional Loss Coordinators so that all units may benefit.

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SAFETY
MEETINGS

The purpose of safety meetings is to stress the importance of safety in daily operations and to implement recommendations presented by the Safety Committee or Operations Staff to all facility personnel. Meetings should be limited to safety considerations only.

1. Safety Meetings are conducted by the Service Center Operations Manager.
2. Meetings are held on a monthly basis with an average duration of 30 minutes.
3. Meetings should be scheduled to allow all Facility Operations personnel to attend.
4. Meetings can be used for training purposes, as well as safety discussions.
5. Minutes of Safety Meetings must be specific so that they can be used as training documentation. The minutes should include but not be limited to:
 - a. Purpose of meeting (topics to be addressed).
 - b. Names of employees attending meeting.
 - c. Length of meeting.
 - d. Date.
 - e. Type of training conducted (attach copies of all literature handouts).
 - f. Copies of Minutes should be forwarded to the Area and Regional Operational Managers.
6. Service Center Management may request Regional Operations personnel attend.
7. Area Managers should attend at least one Safety Meeting per year, per facility.
8. Outside personnel (i.e., Fire Dept., State or Local Police, Safety Equipment Suppliers, etc.) or films/slides presentations obtained from Home Office, Regional Office or other agencies should be used periodically to vary the meetings.

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ACCIDENT
AND UNUSUAL
INCIDENT
INVESTIGATION

An Accident is an unplanned event caused by unsafe acts and/or unsafe conditions.

An Unusual Incident is an unplanned event which did not result in an accident, environmental damage, or property damage but which had the potential to do so.

As soon as practical following an accident or unusual incident, an investigation and report are to be made. These will usually be done by the immediate supervisor. (Refs. 10.30 and 10.31)

Purpose of Investigation

Accident investigation is a device for preventing accidents. Investigations must be for fact finding, not fault finding. This is not to say that responsibility may not be fixed where personal failure has caused injury, or that such persons should be excused from the consequences. The principal purposes of an accident investigation are:

1. To identify the causes (unsafe act/unsafe condition) of accidents and apply corrective action to eliminate or reduce accident-causing problems to prevent a recurrence.
2. To communicate the particular hazard among employees and to direct attention to accident prevention in general.
3. To determine facts bearing on legal liability.

TRAINING
EMPLOYEES

Issuing orders is not always possible or desirable. In addition to providing direction, supervisors should work to influence the voluntary acts of workers through education and motivation. Much of McKesson's Chemical Safety Program effort is directed toward educating and influencing people.

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TRAINING
EMPLOYEES
(Cont.)

The Supervisor

By including safety as a part of daily activities, the supervisor can increase safety awareness in his department. Instead of thinking that safety is separate from the normal duties, the supervisor should consider safety as a part of normal duties. The following are a supervisor's principal duties:

Maintain order, safely.
Keep work schedule, safely.
Maintain equipment, safely.
Establish work methods and procedures, safely.
Instruct workers, safely.
Keep employees busy, safely.
Supervise work, safely.
Adjust complaints, safely.
Maintain morale, safely.
Control costs, safely.
Assign jobs, safely.

When we include safety as a part of our duties, employees recognize our commitment to safety.

Training Aids

1. Standard posters, literature, safety films, and some training programs should be obtained as needed through the Regional Loss Coordinator from such services as the:
 - a. National Safety Council (Indicate McKesson Corporation when ordering and use Account No. 104830-0006.)
 - b. Trucking Associations
 - c. Chemical Suppliers
 - d. Equipment Vendors

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TRAINING
EMPLOYEES
(Cont.)

2. Special posters, film strips, Material Safety Data Sheets, Chemical Safety Data Sheets, etc., may be obtained from:

- a. Corporate Loss Control
- b. Home Office Operations
- c. Chemical Suppliers
- d. Manufacturing Chemists Association
- e. Chlorine Institute
- f. Compressed Gas Association

Procedures

Written procedures should be on hand for all functions requiring specialized training. Although there shall be on-going efforts to standardize and update procedures from Region and Home Office Operations, it does not preclude the facility from writing procedures to have on hand in the interim where specialized or hazardous operating functions are needed.

OFF-THE-JOB
SAFETY

Off-the-job safety is an important part of the Safety Program. Constant effort should be made to encourage the employee and his family to practice safety away from the work place. An accident at home or on the highway involving the employee or his family provides some of the same stress or lost time as an accident at work. This type of program should be emphasized through films, posters, magazines, bulletins, etc., and as part of periodic safety meetings.

MAKE McKESSON CHEMICAL COMPANY A SAFE PLACE TO WORK.

McKESSON CHEMICAL COMPANY
REPORT OF SAFETY COMMITTEE MEETING

Location _____ Date _____
No. Employees on Committee _____ No. Attended this Meeting _____
Minutes of the Meeting _____

Recommendations - Pending _____

New _____

Meeting Directed By _____ Position _____

Report Reviewed Signed by (Local Manager) _____

Next Meeting - Date _____ Time _____ Place _____

Use Back of Sheet if Necessary

Distribution

- 1) Regional Operations Mgr.
- 2) Area Operations Mgr.
- 3) Safety File

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INTRO-
DUCTION

As a result of our attempts to control and prevent losses in McKesson Corporation, certain philosophies have evolved, providing a foundation for the development of a comprehensive loss prevention effort. These philosophies are briefly described below.

1. Most accidents can be prevented. Analyzing the causes of accidents over time reveals that there are in fact very few non-preventable incidents that result in personal injury and damage to property.
2. Generally, accidents are caused by actions of people. While innovative methods of insuring risks and managing claims can reduce the cost of accidents, the least costly accidents are those that don't occur. Safety and accident prevention must be ingrained in the heart of everyone's job.
3. The ultimate responsibility for loss prevention belongs to line operations management. Line managers who directly supervise physical operations have the most impact on, and the primary responsibility for, accident prevention. Outside resources, with technical expertise, professional analysis, program design, and provision of accurate performance data, can serve as a focal point and catalyst for improved loss prevention.
4. There is significant opportunity and reason to improve our loss prevention record. Our total accident experience remains above the frequencies common to similar industries. The costs of these accidents have risen and will continue to rise sharply due to the rising costs of insurance, compensation, medical treatment, and court settlements. A large organization such as ours will bear the economic consequences of our experience over the long run.

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INTRO-
DUCTION
(Cont.)

5. Accurate, timely data on the incidence of accidents is an absolute prerequisite to effective loss prevention.

With these philosophies in mind, and giving full consideration to the appropriate role of a corporation wide cost-improvement effort, a Corporate Loss Prevention Program has been developed, as outlined hereafter.

PROGRAM

- I. Reinforce line management's responsibility and accountability for accident reduction and cost control.
 - A. Each month, the profit center supervising the physical operations at each location is charged up to \$5,000 per occurrence for the incurred cost of casualty claims, and up to \$10,000 for claims involving property losses of the unit.
 - B. The balance of total costs to the Corporation will be developed annually and allocated monthly to the Operating Group, on the basis of 36-month cost experience.
 - C. Management should establish accident improvement goals as part of performance objectives. Actual performance, as compared to the objectives, should be included in assessments of individual contributions and discussed in performance reviews.
- II. Quarterly accident summaries will be provided to the Chief Operating Officer as well as to each Operating Group President. Comprehensive reports, containing a breakdown of each operating location of the Company, will be collected and compiled by each Group's safety administrator. This data will assist in evaluating the progress of accident prevention efforts at each Service Center.

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PROGRAM
(Cont.)

III. Staff resources will be provided by the Corporate Risk Management Department and/or by appropriate Operating Groups to facilitate loss reduction efforts, as described below.

- A. Safety engineering evaluations of locations will be available upon request, or as considered necessary by Risk Management.
- B. Resource materials (films, posters, etc.) will be available upon request, to supplement on-going individual Group programs.
- C. Specific safety programs (environmental monitoring, lift truck operator training, driver training, etc.) will be analyzed, and solutions coordinated with operating management.
- D. Accident Investigations will be performed, for all fatalities or serious losses, by an ad hoc committee selected by the applicable Operating Group President. The committee will submit findings and corrective alternatives to the Chief Executive Officer and Operating Group President, and will conduct a six-month follow-up review of action taken.
- E. Regulatory compliance - Corporate resources will be available to assist each Group in complying with OSHA regulations, national & local fire codes, boiler/pressure vessel regulations and other regulatory agencies' regulations.
- F. Target Safety Programs will be presented by Corporate Risk Management to address specific areas of operations where improvement is most warranted. These Corporate programs will be presented with the intention of supporting the loss prevention activities developed by each Operating Group. Locally designed and administered programs are encouraged, since they are the foundation and backbone of loss prevention.

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CONTRACTOR'S WORK AGREEMENT	9/15/85	9/15/85	

GENERAL Sound business practice dictates that McKesson Chemical obtain a hold harmless agreement and certificates of insurance whenever an outside contractor is hired to perform construction or repair work or services.

CERTIFICATE OF INSURANCE A certificate of insurance is formal evidence of insurance coverage. It is not a commitment or contract of obligation, nor does it substitute for same.

HOLD HARMLESS AGREEMENT A hold harmless agreement is a formal contract whereby one party assumes certain legal liability on behalf of another party.

 In the case of outside contractors, a work agreement (Exhibit 1) is to be obtained. As shown on the form, this agreement is supported by certificates of insurance evidencing coverage for workers' compensation and general and automobile liability.

REQUIREMENTS The Area Operations Manager is responsible for obtaining and maintaining such documents or advising of exceptions. No exceptions to the above requirements and no modifications to the work agreement can be made without approval of the Vice President Operations, in consultation with the Law Department.

McKESSON CORPORATION WORK AGREEMENT

THIS AGREEMENT is made and entered into this _____ day of _____, 198__, between _____, hereinafter referred to by the pronoun "you", and McKESSON CHEMICAL COMPANY, a division of McKesson Corporation, a Maryland corporation, hereinafter called "McKesson".

During the term hereof, this Agreement shall cover all work and/or services ordered by McKesson and accepted by you, pertaining to McKesson's operations.

1. ITEMS SUPPLIED.

You will furnish (a) personnel with training, experience and physical ability together with the necessary and adequate supervision in order to perform the service undertaken in a workmanlike manner without endangering the lives or property located at the work site, and (b) in good, safe and serviceable condition, all tools, equipment and supplies customarily required by your employees for the performance of the service.

2. CONTRACT PRICE: BILLING.

McKesson shall pay you for said work at the price agreed upon by McKesson and you, when such work has been completed to the satisfaction of McKesson. McKesson may withhold payment to protect itself from loss by reason of any failure by you to pay for the items furnished by you.

3. LAWS, REGULATIONS AND COMPANY RULES.

You agree to obtain all permits and licenses required for your performance of said work and to comply with all federal, state and local laws (including labor laws), ordinances, rules, executive orders, regulations and orders of governmental agencies applicable to said work. You further agree to comply with all safety and/or security regulations of which you may be notified from time to time by McKesson or which are posted by McKesson at work sites.

This includes, but is not limited to, (i) reviewing McKesson form HC-2 which identifies hazardous chemicals to which you or your personnel may be exposed while performing your work and the location of Material Safety Data Sheets ("MSDS") for these hazardous chemicals, and (ii) advising your personnel of the existence of said hazardous chemicals and the location of said MSDS.

You shall perform all work in such manner as to cause a minimum of interference with McKesson's operations and the operations of other contractors on the premises; to protect all persons and property thereon from damage or injury; and shall assume responsibility for the taking of such precautions by you and your subcontractors' employees, agents, licensees, permittees and subcontractors. This includes, but is not limited to, written notification to McKesson of hazardous chemicals you may bring on site. Upon completion of the work, you shall leave the premises clean and free of all tools, equipment, waste materials and rubbish.

5. INDEMNITY - PROPERTY DAMAGE, BODILY INJURY AND WRONGFUL DEATH.

You agree to defend, indemnify and hold McKesson harmless against all losses, claims, damages and suits arising out of or incidental to the work to be performed under this Agreement, whether or not groundless, false or fraudulent, including all counsel fees and other expenses of litigation, on account of (i) any damage or loss to the property of McKesson, its licensees, permittees, contractors or subcontractors, or (ii) bodily injury or death that may occur wholly or partially as a result of your willful misconduct, negligent acts or omissions or those of your agents, employees or subcontractors.

6. INSURANCE.

You and your subcontractors shall, at all times while operations are conducted hereunder, maintain the following minimum insurance coverages:

- A. Workers' Compensation, providing statutory benefits, and Employer's Liability Insurance, covering your employees engaged in work performed hereunder, in compliance with the state having jurisdiction over each employee. The Workers' Compensation policy shall have attached the "Voluntary Compensation Endorsement". The limit for Employer's Liability and the limit for Voluntary Compensation shall both be \$1,000,000 per occurrence.
- B. Comprehensive General Liability Insurance with a combined single limit per occurrence of \$1,000,000 for bodily injury and property damage, with an endorsement to cover Contractor's Liability under Paragraph 5 of the Work Agreement.
- C. Comprehensive Automobile Liability Insurance, including non-owned and hired vehicle coverage, with a combined single limit per occurrence of \$1,000,000 for bodily injury and property damage.

- D. Contractual Liability Insurance (if not included in B above) with limits of \$1,000,000.

Where not contrary to law, the insurance policies provided for herein shall contain a provision stating that the insurance underwriters waive all rights of subrogation in favor of McKesson for the Workers' Compensation and Employer's Liability policies. Further, all other policies shall name McKesson as an additional insured and contain a provision stating that insurance underwriters shall waive all rights of subrogation in favor of McKesson.

Certificates evidencing the required insurance shall be delivered to McKesson prior to commencement of work and shall provide that any change in or cancellation of any policy(ies) under which certificates are issued shall not be valid as respects McKesson until McKesson has received at least thirty (30) days' written notice of such change or cancellation.

7. INDEPENDENT CONTRACTOR.

You shall be an independent contractor with respect to the performance of all work hereunder, and neither you nor your employees nor subcontractors nor their employees shall be deemed for any purpose to be the employee, agent, servant or representative of McKesson.

8. RIGHT TO AUDIT.

You and your subcontractors shall each maintain a true and correct set of records pertaining to the work to be performed hereunder, which shall be subject to inspection by McKesson or its representatives hereunder.

9. TERMINATION.

McKesson may, at its absolute discretion, stop said work at any time, and where you are not in default hereunder. McKesson agrees to pay you for all work theretofore done and all materials theretofore furnished pursuant to this Agreement.

10. ASSIGNMENT; SUBCONTRACTING.

You shall not assign this Agreement or subcontract the whole or any part of said work without McKesson's prior written consent.

11. OTHER AGREEMENTS.

No contract, agreement, papers, document, delivery ticket, invoice, work order and/or any form used by you in connection with the service rendered pursuant hereto shall in any way modify, alter, amend or change any of the terms or conditions set out herein unless it is signed by persons of equal position and authority within their respective companies to those signing this Agreement.

12. FORCE MAJEURE.

Either party shall be absolved from its obligations hereunder when and to the extent that performance is delayed or prevented (and, in McKesson's case, when and to the extent that its need for the articles, materials or work to be supplied hereunder is reduced or eliminated) by reason of acts of God, or of force majeure, fire, riot, explosion, war, strikes, labor disputes or governmental laws, orders or regulations.

13. GOVERNING LAW.

McKesson and you agree that the laws of the state where the work is performed will control as to all aspects of this Agreement and its interpretation, and that all definitions contained therein shall be applicable here except where this Agreement may expressly provide otherwise.

McKESSON CHEMICAL COMPANY
a division of McKesson Corporation

By _____

Its _____

(Name of Contractor)

By _____

Its _____

Section	Reference	Page	End
GENERAL SAFETY	10.10	1	
Subject	Issue Date	Effective Date	
HAZARDOUS WASTE POLICY	9/15/85	9/15/85	

GENERAL

It is McKesson's policy to minimize its generation of hazardous wastes. This will be accomplished through engineering controls, careful operating practices, continued training and education of our employees, and recommendations to our customers who use returnable containers.

When hazardous wastes are generated, it is McKesson's policy to manage those wastes in an environmentally sound and legally acceptable manner. McKesson will neutralize acidic or alkaline wastes on-site as necessary prior to discharge to sewer. McKesson will also treat its generated wastes on-site as appropriate to reduce their volume and/or their degree of hazard. If on-site treatment is not feasible, McKesson will utilize recycling or incineration as environmentally sound alternatives. It is McKesson's policy to not dispose of waste in landfills or by deep well injection unless no other viable disposal alternatives are available.

DISPOSAL
GUIDELINES

A. Organic Waste

1. Liquids

- a. Neutral liquids (for example, hose drainage, IPA line flushing)
Recycle or incinerate
- b. Acidic liquids (for example, acetic acid)
Neutralize and sewer
- c. Alkaline liquids (for example, DEA)
Incinerate

2. Solids

- a. Neutral solids (for example, Methocel)
Incinerate
- b. Acidic solids (for example, oxalic acid)
Neutralize and sewer or incinerate

McKesson
Operations

Section	Reference	Page	End
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HAZARDOUS WASTE POLICY	9/15/85	9/15/85	

DISPOSAL
GUIDELINES
(Cont.)

3. Liquid/solid mixture (for example, partially polymerized styrene)
Incinerate
4. Spartanburg Drum Plant Sludge
Incinerate
5. Samples
 - a. Retained samples
Return to next packaging run
 - b. Sales samples
Offer to local customer or return to supplier

B. Inorganic Waste

1. Liquids

- a. Dilute aqueous liquids (for example, diked rainwater)
Treat on-site to minimum quality necessary to sewer
- b. Acidic and alkaline liquids (for example, hose drainage, drum rinsate)
Neutralize and sewer
- c. Concentrated liquids (for example, silicates)
Offer to manufacturer

2. Solids

- a. Acidic and alkaline solids (for example, soda ash and oxalic acid)
Neutralize and sewer
- b. Neutral solids (for example, calcium chloride and nonhazardous floor sweepings)
Trash for nonhazardous
Incinerate hazardous

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HAZARDOUS WASTE POLICY	9/15/85	9/15/85	

DISPOSAL
GUIDELINES
(Cont.)

3. Samples

- a. Retained samples
Return to next packaging run
- b. Sales samples
Offer to local customer or return to supplier

C. Others

1. Empty drums

- a. Metal
Return to reconditioner
- b. Polydrums
Incinerate

2. Empty bags
Incinerate

3. Empty sample bottles
Reuse for the same product or

- a. Inorganic
Triple rinse with water and trash
- b. Organic
Triple rinse with isopropanol flush solution and trash

4. Laboratory wastes

- a. Organic
Incinerate
- b. Aqueous
Neutralize and sewer
- c. Solids
Incinerate

McKesson
Operations

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Subject	Issue Date	Effective Date	
CHEMICAL WASTE HANDLING AGREEMENT	6/30/86	6/30/86	

- PURPOSE** To ensure consistent management of customer wastes transferred to MEC.
- POLICY**
1. The Chemical Waste Handling Agreement (Exhibit 1), Law Department form M-4/21/86, is to be completed for all customer waste transactions except those covered under the Joint Marketing Agreement between MCC and ENSCO.
 2. The Chemical Waste Handling Agreement (Exhibit 1) must be completed at the Area or Regional level.
 3. Any variance from the Chemical Waste Handling Agreement (Exhibit 1) requires the approval of the Law Department.
- PROCEDURES**
1. In completing the Chemical Waste Handling Agreement (Exhibit 1), delete handling methods (Section 2) which do not apply. The handling methods are:
 - a. recycling, reclamation, recovery of blending into waste derived fuels;
 - b. purchase of Generator's Waste Materials;
 - c. refining
 2. Under Section 5, delete the two pricing arrangements which do not apply. Price arrangements correspond with the selected handling method:
 - a. Generator pays MCC;
 - b. MCC pays Generator;
 - c. Generator pays MCC for refined Waste Materials.

McKesson
Operations

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CHEMICAL WASTE HANDLING AGREEMENT	6/30/86	6/30/86	

PROCEDURES
(Cont.)

3. Complete Appendix "A" by inserting the address of the appropriate Service Center in the space for "Identified Facility." If MCC is to arrange transportation by others, the name of the carrier(s) is (are) to be inserted under "Subcontractors." The carrier must be EPA and/or State approved and registered with a current Certificate of Insurance on file.
4. An approved Spent Materials/Waste Products Survey and accompanying analysis is to be attached as Appendix "B".
5. If handling method (c) (refining), is selected, attach an Appendix "C" consisting of the Generator's specifications.

CHEMICAL WASTE HANDLING AGREEMENT

On this _____ day of _____ 198__, the parties, McKesson Chemical Company, a division of McKesson Corporation, a Maryland corporation with offices at _____, _____ (hereinafter called "Contractor"), and _____, a _____ [corporation, partnership or sole proprietorship] with offices at _____ (hereinafter referred to as "Generator"), have agreed as follows:

1. Waste Materials. During the term of this Agreement, Generator will deliver or cause to be delivered to Contractor, certain waste materials generated at its facilities specified in Appendix "A" attached hereto and incorporated herein by reference (the "Originating Facility"). The characteristics, composition, quantity and concentrations of the hazardous constituents of all such materials (the "Waste Materials") are accurately described in Appendix "B," consisting of a Spent Materials/Waste Products Survey and accompanying analysis. The term "Waste Materials" also includes containers described on Appendix "B," which is made a part hereof, if they are to be supplied by Generator. It is understood and agreed that Contractor bases its (or its subcontractor's) testing and evaluation procedures on the descriptions furnished by Generator and that any change in the characteristics, composition, quantity or concentrations of the hazardous constituents of the Waste Materials would require a modification of this Agreement.

2. Handling Methods. Contractor (or those subcontractors approved herein) shall handle Generator's Waste Materials delivered hereunder in the following manner: [DELETE SECTIONS NOT APPLICABLE]

a. Collect (pick-up) and transport, or receive, the Waste Materials from the Originating Facility to a McKesson EnviroSystems Company facility identified in Appendix "A," to be reclaimed, recovered, recycled, or blended into waste-derived fuels for use in industrial kilns, furnaces or boilers; and cause any remaining residues to be disposed of by incineration at the ENSCO, Inc., facility in El Dorado, Arkansas. It is understood and agreed that the Waste Materials may be temporarily stored at a facility of Contractor identified in Appendix "A" before they are transported to McKesson EnviroSystems Company. Hereafter, all facilities identified in this subsection 2(a) are referred to collectively as "the Identified Facility."

-OR-

b. Purchase from Generator, and Generator agrees to sell, the Waste Materials generated by Generator at the Originating Facility.

-OR-

c. Collect (pick-up) and transport, or receive, the Waste Materials from the Originating Facility to a McKesson EnviroSystems Company facility identified in Appendix "A"; refine the Waste Materials to the specifications set forth by Generator in Appendix "C" which is made a part hereof; return the refined materials to Generator, packaged, labeled and transported in accordance with applicable law; and cause any remaining residues to be disposed of by incineration at the ENSCO, INC. facility in El Dorado,

Arkansas. It is understood and agreed that the Waste Materials may be temporarily stored at a facility of Contractor identified in Appendix "A" before they are transported to McKesson Envirosystems Company for refining. Hereafter, all facilities identified in this subsection 2(c) are referred to collectively as "the Identified Facility."

3. Approval of Handling Methods and Facilities. By its execution of this Agreement, Generator acknowledges and consents to the handling methods and the use of any Identified Facility specified herein, which handling methods and Identified Facility shall not be changed by Contractor without Generator's prior written consent.

4. Transfer of Waste and Title. Generator's Waste Materials will be tendered to Contractor at the place, time and volume specified as typical in Appendix "A." In order to allow Contractor to properly schedule, Generator will furnish Contractor with not less than fifteen (15) business days' notice of all intended transfers of the Waste Materials hereunder. Contractor may require Generator to hold the Waste Material longer, not to exceed 90 days, while consolidating or shipping arrangements are made. Contractor shall have the right, but not the obligation, to inspect, sample, analyse, or test any tendered Waste Materials before accepting such Waste Materials. It is understood and agreed that Contractor may subcontract such inspection, analysis, or testing to one or more of the subcontractors approved herein. Failure or refusal of Generator to provide Contractor with access to tendered waste materials or their shipping containers prior to Contractor's acceptance, shall be deemed a non-conforming tender of those Waste Materials. Contractor's exercise of, or failure to exercise, said right to inspect and sample shall not operate to relieve Generator of its responsibility or liability under this Agreement.

Subject to the remaining provisions of this Section 4 relating to non-conforming Waste Materials, at the time Contractor removes or otherwise takes possession of the Waste Materials from the Originating Facility, title, risk of loss and all other incidents of ownership to the Waste Materials shall be transferred from Generator and vested in Contractor. Any marketable or useable material Contractor may recover from the Waste Materials shall be the sole property of Contractor.

In the event that any or all Waste Materials are discovered to be non-conforming before they are consolidated or commingled with another generator's waste or otherwise altered by Contractor, Contractor may refuse to accept, or revoke its acceptance of, the Waste Materials. A justified revocation of acceptance shall operate to revert title, risk of loss and all other incidents of ownership in Generator, at the time revocation and reasons therefor are communicated orally or in writing to Generator. Waste Materials shall be considered non-conforming, for purposes of this Agreement, if they do not conform to the description provided by Generator in Appendix "B." Contractor may in its sole discretion accept, reject, or revoke acceptance of Waste Materials that it (or an approved subcontractor) determines to be non-conforming or to have been tendered with a deficient hazardous waste manifest.

If Contractor rejects or revokes acceptance of some or all Waste Materials, it will promptly notify Generator. Waste Materials Contractor has refused to accept, or for which Contractor has revoked its acceptance, shall be properly handled and returned to Generator within a reasonable time, after notice of refusal or revocation of acceptance has been received by Generator, unless within such time the parties agree in writing to some alternative manner of materials handling and/or lawful disposition. Generator shall pay Contractor its reasonable expenses and charges for analysing, handling, loading, preparing, transporting, storing and caring for non-conforming Waste Materials returned to Generator under this paragraph. In the event that Contractor agrees in writing to accept non-conforming Waste Materials or the parties agree in writing to some alternative manner of materials

handling and/or lawful disposition of non-conforming Waste Materials, payment shall be made in accordance with the parties' further agreement.

5. Price. [DELETE SECTIONS NOT APPLICABLE]

a. Generator shall pay Contractor according to Appendix "A" which is made a part hereof.

-OR-

b. Contractor shall pay Generator according to Appendix "A" which is made a part hereof.

-OR-

c. Generator shall purchase the refined materials from Contractor according to Appendix "A" which is made a part hereof.

6. Billing. Payment shall be due not later than thirty (30) days of invoice or statement. Contractor shall retain copies of invoices or statements for a period of five (5) years, as a record of the handling procedures implemented.

7. Term. This Agreement shall have a term of one year from the date hereof. Except as may otherwise be provided in Section 8 below, either party may terminate this Agreement, with or without cause, on sixty (60) days' prior written notice to the other party.

8. Contractor Warranties. Contractor represents and warrants that: (a) it is engaged in the business of transporting and temporarily storing the Waste Materials and that it shall do so in a safe and workmanlike manner; (b) it has obtained all necessary permits and licenses and will transport and temporarily store the Waste Materials in full compliance with all existing and applicable governmental laws, regulations, orders and manifests; (c) the Identified Facility is now licensed and permitted to accept and handle waste materials as described in Section 1 and Appendix "B"; and (d) in the event the Identified Facility loses its permitted status hereafter during the term of this Agreement, Contractor will promptly notify Generator of such loss of permitted status. Generator, at its sole option, may then immediately terminate this Agreement.

9. Generator Warranties. Generator represents and warrants that: (a) the description and specifications of its Waste Materials, made in Section 1 and Appendix "B," is true and correct, fairly advises Contractor of the hazards and risks known by Generator to be incident to the collection, transportation, storage, reclamation, recovery, recycling, blending, refining or incineration (whichever is or are among the handling methods specified herein) of the Waste Materials, and is otherwise in full compliance with all materials description requirements of applicable statutes, ordinances, orders, rules and regulations; (b) Waste Materials to be transferred to Contractor hereunder will conform to said description and specifications; (c) Generator has obtained and shall keep in effect all permits, licenses, registrations, and certificates of approval which Generator may be required to have for the tender of Waste Materials and, if applicable, the transport of the Waste Materials to Contractor in compliance with all applicable laws, regulations and orders; (d) if Generator is to supply containers of Waste Materials, the containers shall be fit and proper for the purposes for which they are intended, and will be marked, labeled, packaged and otherwise comply with all DOT and other applicable governmental laws, regulations and orders; (e) it

holds clear title to all Waste Materials to be transferred hereunder; (f) it is under no legal restraint or order which would prohibit transfer of possession or title to such materials to Contractor for the handling methods specified herein; (g) if it receives information during the term hereof that its Waste Materials present or may present a material hazard or risk to persons or the environment which was not disclosed in Appendix "B," Generator shall promptly report such information to Contractor, which information shall include, but not be limited to, any relevant notification of substantial risk required to be given to the Generator by the raw or ingredient material supplier(s) pursuant to Section 8(e) of the Toxic Substances Control Act; (h) if regulations promulgated or revised under Section 3001 of the Resource Conservation Recovery Act of 1976, as amended, identify the Waste Materials as "hazardous waste" either by characteristics or listing, Generator, prior to tendering any waste products to Contractor, has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Contractor with evidence thereof; and (i) if the Waste Materials are, or contain, hazardous substances as defined pursuant to Section 101(14) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Generator has and will advise Contractor in writing, prior to tendering or delivering to Contractor any Waste Materials containing a reportable quantity of any hazardous substance or substances pursuant to Section 102 of said Act, specifying those hazardous substances present in a reportable quantity.

10. Indemnification. Contractor agrees to indemnify, save harmless and defend Generator from and against any and all liabilities, penalties, forfeitures, suits, losses, damages, and costs and expenses (including costs of defense, settlement and reasonable attorney, consultant or other professional fees and the reasonable costs of investigation, containment and cleanup), which Generator may hereafter incur, become responsible for or pay out as a result of death or bodily injury to any person, destruction or damage to or loss of use of any property, contamination of or adverse effects on the environment, or any violation of governmental laws, regulations or orders, to the extent caused by: (i) Contractor's breach of any representation, warranty, term or provision of this Agreement; or (ii) the negligence or intentional misconduct of Contractor, its employees or agents, in the performance of this Agreement. This indemnification provision shall survive the termination of this Agreement.

Generator agrees to indemnify, save harmless and defend Contractor from and against any and all liabilities, penalties, forfeitures, suits, losses, damages, and costs and expenses (including costs of defense, settlement and reasonable attorney, consultant or other professional fees and the reasonable costs of investigation, containment and cleanup), which Contractor may hereafter incur, become responsible for or pay out as a result of death or bodily injury to any person, destruction or damage to or loss of use of any property, contamination of or adverse effects on the environment, or any violation of governmental laws, regulations or orders, to the extent caused by: (i) Generator's breach of any representation, warranty, term or provision of this Agreement; or (ii) the negligence or intentional misconduct of Generator, its employees or agents, in the performance of this Agreement. This indemnification provision shall survive the termination of this Agreement.

11. Insurance. Contractor shall maintain, at its expense, during the term of this Agreement, insurance (or self-insurance) for (i) statutory Workers' Compensation and (ii) General Liability, including contractual liability coverage, with limits of not less than \$5,000,000 combined single limit for bodily injury and property damage, insuring its obligations hereunder.

12. Work on Generator's Premises. Generator agrees to provide Contractor, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by Generator. Contractor, its

employees and subcontractors shall comply with Generator's reasonable safety procedures while on Generator's premises, provided such procedures are conspicuously and legibly posted in the working area or have been delivered, in writing, to Contractor prior to the commencement of work on Generator's premises.

13. Subcontractors. Generator's execution of this Agreement evidences its consent to Contractor's contracting with the parties set forth on Appendix "A" which is made a part hereof, with respect to certain services to be performed hereunder.

14. Excuse of Performance. The performance of this Agreement, except for the payment of money for services already rendered or for Waste Materials already purchased, may be suspended by either party in the event the tender of the Waste Materials by Generator to Contractor, or the handling (as specified herein) of the Waste Materials by Contractor is prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, civil disorders or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements, injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgment).

15. Delegation and Assignment. Except as may otherwise be provided in Section 13 herein or in Appendix "A," Contractor may not, without the prior written consent of Generator, delegate or assign the performance of the services specified herein, or any portion thereof, which is by this Agreement undertaken by Contractor, or cause the handling of the Waste Materials at any facility not specified herein.

16. Tender of Delivery. Generator shall tender to Contractor or its subcontractors those properly completed documents, shipping papers or manifests as are required for lawful transfer of the waste materials to Contractor by valid and applicable statutes, ordinances, orders, rules or regulations of federal, state or local governments.

17. Transportation. If this Agreement provides that Contractor is to provide collection (pick-up) and transportation services, selection of transportation vehicles or vessels, times of travel and route shall be solely determined by Contractor. In selecting such vehicles or vessels compatible with the Waste Materials, Contractor shall rely on Generator's description of the Waste Materials.

18. Independent Contractor. In the event that Contractor is to provide any services under this Agreement, it shall perform such services as an independent contractor and Contractor agrees not to represent itself as an agent or legal representative of Generator for any purpose whatsoever.

19. Notice. Any notice to be given under this Agreement shall be in writing and delivered to the address of the respective party below:

Generator: _____

Contractor: McKesson Chemical Company

Either party may, by notice to the other, change the addresses and names above given.

20. Entire Agreement. This Agreement, together with its appendices, represents the entire understanding between the parties hereto relating to the matters addressed herein and supersedes any and all prior agreements, whether written or oral, that may exist between the parties. No modification or waiver of any provision of this Agreement shall be of any force or effect unless in writing and signed by the party claimed to be bound thereby. In no event shall the preprinted terms or conditions found on any Contractor or Generator purchase or work order, or invoice or statement, be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties; such preprinted terms or conditions shall be considered null and void and of no force or effect. Nor shall prior courses of dealing or usages of trade be used to modify, vary, supplement, or explain any provision of this Agreement.

21. Attorneys' Fees. If any legal action is commenced because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Agreement, the prevailing party shall be entitled to recover attorneys' fees and costs, in addition to any other relief to which it may be entitled.

22. Law to Govern. This Agreement and its attached appendices shall be governed by the laws of the State of California, except that this Agreement shall be given a fair and reasonable construction in accordance with the intention of the parties and without regard to, or aid of, Section 1634 of the California Civil Code.

In Witness Whereof, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

McKESSON CHEMICAL COMPANY

By: _____

Title: _____

By: _____

Title: _____

APPENDIX "A"

1. Originating Facility:

2. Identified Facility:

McKesson Chemical Company

McKesson Envirosystems Company

3. Tender of Waste Materials:

Place: _____

Time: Gallons _____ Pounds _____
Drums _____ Other _____

Per: Day _____ Week _____ Month _____ Year _____
One Time _____

4. Price:

5. Subcontractors: McKesson Envirosystems Company

McKesson Operations

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POLICY

Each Service Center and Stockpoint will be prepared, equipped and trained to respond to emergency situations. These include, but are not limited to:

- Fire and/or explosion
- Chemical spills or materials releases
- Natural disasters.

PROCEDURES

1. Each McKesson chemical facility will have and maintain a current Contingency Plan and Procedures: Chemical Emergency Preparedness and Related Activities.
2. Each plan will designate an Emergency Coordinator and Alternate Emergency Coordinator.
3. Plans will contain a current site plan, designating the locations of emergency response equipment, evacuation routes and evacuation assembly points.
4. Copies of plans will be maintained at the facility and with the appropriate Regional Operations Manager. Copies will also be provided to organizations (such as local First Responders) designated in the plan as assuming some role in an emergency.
5. Each facility will be equipped with the appropriate Emergency Response Kit (Exhibit 1).
 - Kit A - designed for all warehouse or packaged material locations
 - Kit B - designed for all bulk or repackaging locations
 - Kit C - designed for all compressed gas repackaging locations.

GENERAL EMERGENCY GUIDELINES

1. Assess the event.
2. Activate the Contingency Plan.

McKesson Operations

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GENERAL EMERGENCY GUIDELINES (Cont.)

3. Decide on and implement a course of action.
 - rescue injured or endangered persons
 - prevent container failure
 - contain hazard

4. Clean up and recover from the event.

EMERGENCY CALL LIST

A current emergency telephone call list of work and home phone numbers for McKesson Emergency Coordinators and other responsible individuals is maintained at CHEMTREC, the chemical emergency communication service of the CMA (1-800-424-9300).

Notify Home Office Operations of any changes in home or work phone numbers and designated emergency coordinators so that the CHEMTREC list can be updated in a timely manner. Revised call lists will be sent from Home Office Operations to emergency coordinators, alternates and other responsible individuals within McKesson when changes occur, or at least bi-monthly.

REPORTING

All emergencies must be reported to Regional Operations Manager or the Vice President of Operations, Home Office or their staffs, as promptly as possible. This is in addition to other reporting that may be required. Refer to Sections 30.61 and 100.10 for details.

ASSISTANCE TO CUSTOMERS, FIRST RESPONDERS AND OTHERS

Facilities will be prepared to assist customers, transportation companies, first responders and the public in the event of an emergency involving McKesson chemical products. The Chemical Emergency Report (Exhibit 2) may be used to obtain information useful to determining the type of response needed.

McKesson Operations

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ASSISTANCE
TO
CUSTOMERS,
FIRST
RESPONDERS
AND OTHERS
(Cont.)

If the incident could result in a products liability claim against McKesson, a responsible representative must go to the scene and talk to the claimant to determine the extent and cause of alleged damages. All conversations with the customer should be noted in writing in a timely manner.

Responsible McKesson representatives should be dispatched in the following order, as available.

- 1 - Service Center Manager or Assistant
- 2 - Service Center Operations Manager
- 3 - Service Center Sales Person.

McKesson
Operations

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EMERGENCY PROCEDURES	9/15/85	9/15/85	

GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

Note: Supplementary pallets need not have the pioneer tools.

- Large flashlights with spare batteries.
- 2 sets of protective pants and boots, with chemical gloves and goggles.
- Recovery drum.

B Pallet (minimum of one for each Service Center with one or more tank truck or bulk facilities)

- Small capacity powered pump, 2 x 100 ft of hose and fittings. (Air-powered diaphragm pump, such as Wilden Model M-2)¹
- Pump accessories, hose, etc., as needed.
- Two or more rolls of polyethylene sheeting.
- Absorbent pads or rolls.
- Absorbent floating booms.
- Two mech. jacks with 12" (or more) lift.²
- Tank truck lifting straps. (2 @ 45,000# ea. cap.)³
- 2 x 100ft coils of 1/2" nylon rope.

¹ The pump will be worked off tractor air or any other air source. See Wilden, Exhibit 3.

² Jacks can be obtained from Duff-Norton, Exhibit 4.

³ Lifting straps from Lift-All, Exhibit 5.

McKesson
Operations

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EMERGENCY PROCEDURES	9/15/85	9/15/85	

GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

- Heavy duty tools:
 - Crowbar, Wrecking Bar
 - Hammer
 - Pipe Wrenches
 - Hacksaw with spare blades
 - Cable Hoist (come-along)
 - 2ft x 2ft Rubber Sheet
 - 30ft of 1/2" Chain with hooks and turnbuckles
- Two full protective suits and boots, with chemical gloves and goggles.
- Accessories: (variable additions)
 - Scott Air Paks, MSA Industrial Gas Masks, Oxygen Masks, etc.
 - 4 x 10 lb. ABC Fire Extinguishers
 - 2 sets Triangle Emergency Markers
 - First-Aid Kits
 - Recovery Drums
 - Empty OH Drums with heavy-duty polyethylene liners, heads, closure rings, hazardous waste labels, etc.
- Come-along Hoist
- Bung Wrench, large
- Bung Wrench, small
- Spigot, large
- Spigot, small
- Bottle Neutralizer Eye Wash
- Delpump
- 2 Brooms, stiff bristle, push-type
- Crescent Wrench

McKesson
Operations

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EMERGENCY PROCEDURES	9/15/85	9/15/85	

GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

- Hazard Label Set
- Derma-Tek 240 Skin Cream

Note: The Emergency Reaction Team Leader should have a binder with a copy of all Material Safety Data Sheets for items routinely stored at the facility. This information will be invaluable in neutralizing or controlling an emergency.

C Pallet (or) Chlorex Pallet (minimum of one for each Chlorine Plant)

- 2 MSA Gas Masks
- 2 Scott Air Paks
- 1 or 2 Emergency Kit A for cylinders
- 1 or 2 Emergency Kit B for tons
- Emergency Oxygen Unit
- Emergency Oxygen Tank (spare)
- Scott Air Pak Air Tank (spare)
- Handtruck with large tires and restraining chain for cylinders
- 2 pr. Rubber Gloves
- 2 pr. Leather Gloves
- 2 Suits, protective
- Flashlight with extra alkaline batteries

McKesson
Operations

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GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

- Tool box with chlorine wrenches and crescent wrench; spare valves, yokes and adapters; tubing cutter and flaring set; 50ft roll of 3/8" soft copper type K tubing and flare nuts; and spare fiber and lead washers, outlet caps with gaskets and stem nuts.

3. Training and drills must be carried on periodically as needed to keep our personnel prepared and equipped to deal with emergencies.

II. With customers or other locations:

A. Application

Each Service Center shall be prepared to assist our customers, transportation companies, governmental authorities, and the public in any emergency involving our products, or even involving products within our expertise. A very vital point to cover when participating in emergency work outside our locations is the matter of liability where we are not initially at fault. Guidance as to our degree of response must be obtained from Area, Regional, or Home Office Operations. Other protection may include hold-harmless agreement from the customer or transportation company, and specific official authorization or deputization by governmental authorities before proceeding with any remedy, clean-up, etc.

- B. The same procedures and equipment described in Part I shall be employed, and applicable guidelines followed.

Section	Reference	Page	End
GENERAL SAFETY	10.20	9	
Subject	Issue Date	Effective Date	
EMERGENCY PROCEDURES	9/15/85	9/15/85	

GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

C. Product Liability Claims

1. Another aspect of emergency procedures is for an occurrence at a customer's plant that may become a product liability claim. With prompt, careful, and accurate investigation and handling of such incipient cases, most can be held to reasonable limits.
2. Procedure:
 - a. When a report of a possible liability claim is received, someone from McKesson must investigate immediately in order to minimize or prevent the claim. A responsible representative from McKesson must go to the scene at once and talk with the claimant or his representative to determine the extent and cause of the alleged damage. The conversations with customer representative should be written and, if possible, have customer sign. This must be done in a timely manner before damage "grows" or accounts of the incident "change."
 - b. The order for persons to be dispatched to the scene is:
 - (1) Service Center Sales Manager or Assistant
 - (2) Service Center Operations Manager or Assistant
 - (3) Service Center Sales Person or other responsible person

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.20	10	X
Subject	Issue Date	Effective Date	
EMERGENCY PROCEDURES	9/15/85	9/15/85	

GENERAL
GUIDELINES
FOR
EMERGENCIES
(Cont.)

- (c) At no time should any McKesson employee discuss "settling" or any other disposition of a product liability claim with a customer. Our Home Office RIM, Legal, and/or Operations must authorize this to be done and should have the opportunity to appoint a representative at the discussion.
- (d) Any time a product liability claim is suspected, the circumstances MUST be reported to Area and Regional Operations as soon as possible so that our insurance carrier can be notified and, if circumstances warrant, Home Office can be apprised with assistance/advice provided.
- (e) Any time a legal paper related to a claim is served on the Company, this information must be forwarded to Region for transmittal to Home Office Operations and Legal Department and on to RIM as soon as possible. Failure to promptly notify our insurance carrier can prejudice our position and possibly cause them to deny the claim.

Emergency Equipment Inventory

McKesson Chemical Company maintains Emergency Equipment in standard boxes.

Kit A - is designed for all warehouse or packaged material locations.

Kit B - is designed for all bulk or repackaging locations.

Kit C - is designed for all compressed gas repackaging locations.

These kits are sealed and inspected at least four times per year during scheduled Safety and Compliance Reviews. They are reinventoried whenever a seal is broken.

Additional emergency equipment including items such as fire extinguishers are indicated in site plans.

The inventory for Kits A & B are attached. Refer to Sections 90.03 - 90.05 for information on Compressed Gas emergency response equipment.

Packing List and Reorder Guide for McKESSON Type A Response Kit

To reorder any item in the kit simply identify it by identifying the KIT TYPE (in this case "B") and the number of the item on the list. [ie. to order a new non-sparking pipe wrench, identify it as B-39]

Mail your order along with your purchase order number to:

Root Brothers Mfg. and Supply Co., Inc.
10317 S. Michigan Ave.
Chicago, IL 60628
or telephone your order to (312) 264-5000

<u>Item #</u>	<u>Quantity</u>	<u>Description</u>
1	1ea	Aluminum box, 3' d x 3' h x 4' w/handles and snaps
2	4ea	Shovel, Non-sparking, D-handle, flat blade suitable for digging or scooping. S-84
3	1ea	Pipe Wrench, Bryllium, non-sparking, 18"
4	2ea	Rake, 14 tooth, Non-sparking w/60" handle; handle will be cut to fit in box R.
5	1ea	Pick, 20" length, Non-sparking w/handle P-1
6	1ea	Axe, single bit, 4 lb, non-sparking, w/handle A-5
7	6ea	Lantern, 6v, anti-explosion w/circuit breaker bulb *2206
8	12ea	Battery, 6v, Alkaline *529
9	3suit	Protective Suit, PVC coated polyester fabric, jacket w/detachable hood, bib overall w/fly (2sz lg. 1sz x l) 1035/1037
10	3pr	Boot, pull over shoe, knee high, yellow (2sz 10, 1sz 11) *91
11	3pr	Boot, over sock, steel toe, rubber, black *21
12	12pr	Glove, chemical resistant, 14", gauntlet HD, flexible, *1814
13	6pr	Goggles, non-fogging, clear, SC-2
14	3ea	Hard Hat w/face shield attachment & face shield, OSHA approved, 45-087-493
15	3ea	Full face respirator equipped for acid gas, organic vapor, dust & mist w/inter nose piece, *1694-G104-F100
16	12ea	Apron, protective, disposable
17	3ea	Squeegee, extra h.d. 24" w/60" handles 3-24
18	3ea	Push broom, h.d. 18" w/screw in handle 108-18
19	1ea	Hand Truck, w/lrg 10" x 2.75" wheel, 400# capacity *40107
20	1ea	First Aid Kit for 25 people, *530

Kit A
Inventory
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ii

21	1ea	Hand pump, 600 GPH, Viton Diaphragm Delrin body w/10' of suction hose & 10' of discharge hose
22	1kt	Viton complete pump repair kit
23	100ft	Rope, 3/4" Manila, 100'
24	2ea	Fire Extinguisher, 10* ABC
25	1ea	Trouble light, DC powered, #05917
26	1ea	Drum pump, polyethylene
27	6ea	*15A rubber tie down straps
28	12pr	Visitors specs, VS-1
29	2rl	Duct tape, 2" x 60yd, #615
30	1rl	Wire, 18GA, aprox. 830ft
31	12ea	Hose clamps, SS, #40H (for 2" ID hose)
32	1ea	Tool box w/hand tools and socket set (NOT non-sparking)

A FEW ITEMS IN THIS KIT NEED INSPECTION OR REPLACEMENT ON A SCHEDULED BASIS.

ITEM A-8 SHOULD BE REPLACED ON AN ANNUAL BASIS.

ITEM A-24 MUST BE INSPECTED MONTHLY BY QUALIFIED PERSONNEL AND RECHARGED AS NECESSARY.

THE FIRE EXTINGUISHERS ARE DESIGNED FOR MOUNTING ON THE OUTSIDE OF THE KIT. ON THE RIGHT SIDE OF THE KIT THERE ARE TWO SLOTTED SCREWS. TO MOUNT ITEMS A-24 SIMPLY TAKE THE EXTINGUISHERS OUT OF THE KIT, REMOVE THE BRACKET FROM THE EXTINGUISHER BOX, REMOVE THE SCREW FROM THE RIGHT SIDE OF THE BOX, MOUNT THE BRACKET WITH THE SCREW THAT YOU REMOVED, AND HANG THE FIRE EXTINGUISHER.

THIS KIT IS DESIGNED TO BE SIMPLE AND EASY TO USE. IT IS FOR USE IN EMERGENCIES ONLY. IT IS NOT POSSIBLE TO COVER EVERY SITUATION THAT MIGHT ARISE. MANY OF THE ITEMS ARE DESIGNED FOR SHORT TERM USE. THIS KIT IS NOT DESIGNED FOR SUSTAINED USE IN HAZARDOUS SITUATIONS WITH DANGEROUS MATERIALS.

WARNING! TOOLS AND EQUIPMENT IN THIS KIT WILL CAUSE SPARKS. NON-SPARKING TOOLS HAVE BEEN SPECIFICALLY IDENTIFIED.

Kit B
Inventory
6/86

Packing List and Reorder Guide for McKESSON Type B Response Kit

i

To reorder any item in the kit simply identify it by identifying the KIT TYPE (in this case "B") and the number of the item on the list. [ie. to order a new non-sparking pipe wrench, identify it as B-39]

Mail your order along with your purchase order number to:

Root Brothers Mfg. and Supply Co., Inc.

10317 S. Michigan Ave.

Chicago, IL 60628

or telephone your order to (312) 264-5000

<u>Item #</u>	<u>Quantity</u>	<u>Description</u>
1	1ea	Aluminum box, 3' d x 3' h x 4' w/handles and snaps
2	1ea	Pump, Air PolyPro 1" x 1" w/flanges, gasket & bolts M2/PO
3	1kt	Repair kit, complete, for above pump
4	1ea	125lb. pressure regulator for pump
5	2ea	Hose, 1" EDPM/Nitrile, with Brass 1" NPT Fittings, 50'
6	1ea	Hose, 1/4" air, with fittings to hook up to air supply on tractor or compressor
7	2rl	Polyethylene Sheeting 2 RL 8 x 100, 4 Mil
8	2ea	Boom, Arsoorb, Floating 10' x 5"
9	2ea	Jack, 12" Lift, 22" long L5J5 Hydraulic, Long Stroke
10	2ea	Strap, Tank Truck, Lift, EE2-812 x 20' Nylon Basket 53800*
11	2ea	Rope, 100' Manila, CN 121
12	1ea	Crow Bar, #160, Pinch point
13	2ea	Wrecking bar, #166, 3/4" x 36" x 5 1/4"
14	1ea	Hammer, Brass 2"
15	1ea	Hammer, Drilling 4"
16	1ea	Pipe Wrench 14" Ridgid Straight
17	12pr	Protective Glove, chemical resistant, 14" gauntlet, HD, flexible
18	2ea	Pipe Wrench 18" Ridgid Straight
19	1ea	Pipe Wrench 24" Ridgid Straight
20	1ea	Hack Saw w/Blades, MF #48 + 6 18T Blades
21	1ea	Come-Along, 2T, #10502

Kit B

Inventory

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22	2ea	Rubber Sheet 2 x 2 x 1/8"
23	1ea	Chain, 30' x 1/2" Proof Coil w/1 grab hk & 1 slip hk. & 2 shackles
24	2ea	Turnbuckle 1/2" x 12" Forged J&J
25	2ea	Gas Mask, Organic Vapor, Acid Gas Ammonia *101 w/2 Cannister *2200
26	2ea	Protective Suit, Boots, Gloves & Goggles DIA 1037, 1035, ES 287 DIA *91
27	2ea	Fire Extinguisher, 4A60BC
28	2ea	Triangle Marker (set) HWT-3
29	1ea	First Aid Kit for 25 persons
30	2ea	Bung Wrench, 10 way, non spark *DPW
31	2ea	Spigot, PVC 1ea 2" & 1ea 3/4" *1155
32	2ea	Eyewash, Isotonic
33	1ea	Drum pump
34	2ea	Broom, Push w/Handle *108-18
35	2ea	Wrench, Adj Crescent 10" *77-10
36	4ea	Hazard Label Set 4 labels/set
37	1ea	Protective Hand Cream 6 oz.
38	2rl	Duct tape, 2" x 60 yd
39	1ea	Non-sparking bryllium pipe wrench

A FEW ITEMS IN THIS KIT NEED INSPECTION OR REPLACEMENT ON A SCHEDULED BASIS.

ITEM B-27 MUST BE INSPECTED MONTHLY BY QUALIFIED PERSONNEL AND RECHARGED AS NECESSARY.

THE FIRE EXTINGUISHERS ARE DESIGNED FOR MOUNTING ON THE OUTSIDE OF THE KIT. ON THE RIGHT SIDE OF THE KIT THERE ARE TWO SLOTTED SCREWS. TO MOUNT ITEMS A-24 SIMPLY TAKE THE EXTINGUISHERS OUT OF THE KIT, REMOVE THE BRACKET FROM THE EXTINGUISHER BOX, REMOVE THE SCREW FROM THE RIGHT SIDE OF THE BOX, MOUNT THE BRACKET WITH THE SCREW THAT YOU REMOVED, AND HANG THE FIRE EXTINGUISHER.

THIS KIT IS DESIGNED TO BE SIMPLE AND EASY TO USE. IT IS FOR USE IN EMERGENCIES ONLY. IT IS NOT POSSIBLE TO COVER EVERY SITUATION THAT MIGHT ARISE. MANY OF THE ITEMS ARE DESIGNED FOR SHORT TERM USE. THIS KIT IS NOT DESIGNED FOR SUSTAINED USE IN HAZARDOUS SITUATIONS WITH DANGEROUS MATERIALS.

WARNING! TOOLS AND EQUIPMENT IN THIS KIT WILL CAUSE SPARKS. NON-SPARKING TOOLS HAVE BEEN SPECIFICALLY IDENTIFIED.

**CUSTOMER INCIDENT
CHEMICAL EMERGENCY CHECK LIST**

INSTRUCTIONS

In the event of an incident reported by a customer, find out whom you are speaking to. Ask them if they have actually seen the situation first hand. If not, ask to speak to someone who has. Obtain as much of the information listed below as possible.

Name and telephone number (with area code) of caller: _____

Location (be specific, use address or milepost, include directions) _____

Source and nature

☐ leak ☐ explosion ☐ line rupture ☐ truck accident ☐ other _____

- number of dead or injured: _____

- identity of chemical released (have customer spell out name or give UN/NA number of product): _____

- type and size of container from which release occurred: _____

- time of release : _____ AM or PM ?

- type of release : ☐ continuous ☐ intermittent ☐ instantaneous

- amount released so far: _____ ☐ lbs. ☐ gals. ☐ tons ?

- estimated total amount of chemical that MAY be released: _____ ☐ lbs. ☐ gals. ☐ tons ?

- present status of chemical ☐ gas ☐ liquid ☐ solid ☐ other _____

- is chemical entering

☐ atmosphere ☐ soil ☐ surface water (identify) _____ ?

- direction of vapor clouds or liquid plume: _____

- weather conditions: _____

- countermeasures taken so far: _____

- local terrain conditions: _____

- other organizations notified

☐ fire ☐ police ☐ national response center ☐ other _____

information taken by : _____ (name)

_____ (signature) _____ (date)

NOTE ANY ADVICE GIVEN ON PRECAUTIONS, SAFETY OR COUNTERMEASURES

CENTRAL REGION (Cont.)

St. Louis Area - Nolan Payne

Burlington - John Tobin

Kansas City - Alex Maslow

Minneapolis - Ron Marchand

Omaha - Leroy Jensen

St. Louis - Charles Slaybaugh

Springfield - Bill McPhail

Wichita - Wayne Sondergard

Privacy Act



Dolton PRF - John Pesek

Wichita PRF - Wayne Sondergard

Privacy Act



WESTERN REGION

Region - Dwight Landry

- Nick Gardner

Privacy Act

- Pending -

Houston Area - Robert Sheffield

Amarillo - Patricia Curry

Beaumont - Nancy Henderson

Corpus Christi - Paul Klinger

Dallas - Bill Jones

Houston - Tom Dillard

Oklahoma City - Dan Schneider

San Antonio - Johnny DeLeon

Privacy Act



WESTERN REGION (Cont.)

Los Angeles Area - Bill Crumm

Albuquerque - Mick Eminger

Bakersfield - Jeff Keller

Los Angeles - Pending

Orange County - Roger Wagner

Phoenix - Mike Bango

Riverside - JoAnne Rondilone

Tucson - Rose Siemens

San Francisco Area - Carl Piercy

Denver - George Martin

Fresno - Jennifer Hall

Grand Junction - Jerald Conyers

Portland - Jerry Jones

San Francisco - Ken Watson

Seattle - Jim Cook

Santa Fe Springs Bulk Plant - Stan Barnhill

Privacy Act

- Pending -

Privacy Act

Privacy Act

Privacy Act

HOME OFFICE OPERATIONS MANAGEMENT

HOME TELEPHONE NUMBERS

Dick A. Davis

VP, Operations &
Materials Mgmt.

Douglas L. Eisner

Technical Director

Judith A. Cichowicz

Manager, Operations
Support

Donald M. Black

Regulatory
Compliance Mgr.

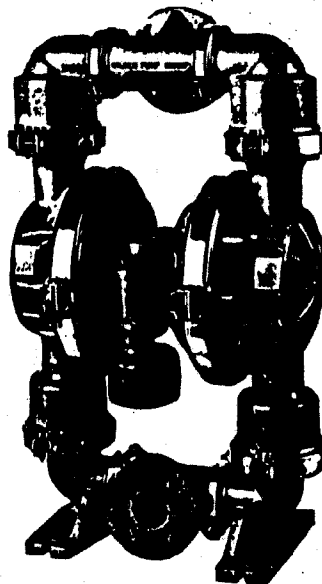
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Introducing

THE WILDEN "CHAMP"

**THE PUMP
THE CHEMICAL
PROCESS
INDUSTRY HAS
DEMANDED**



**A CORROSION-RESISTANT, SEALLESS, VIRTUALLY INDESTRUCTIBLE,
INJECTION-MOLDED, SOLID . . .**

PVDF OR POLYPROPYLENE WILDEN PUMP

Engineered by Wilden Pump and Engineering Co., the leader in Air Operated Diaphragm Pumps for 25 years, to solve your most difficult pumping problems. All the advantages of an Air Operated Diaphragm Pump plus the corrosion resistance of **PVDF or POLYPROPYLENE**. Traditional Wilden Quality at **competitive pricing**.

Available with the full range of Wilden elastomers including our award winning Teflon diaphragm. The "Champ" has 2-Inch flanged inlet and discharge connections. Capacity to 135 gpm.

- Etching Solutions
- Plating Solutions
- Acids/Bases
- Photographic Solutions
- Textile/Dye Solutions
- Solvents
- Pickling Solutions
- Aqua Regia
- Ferric Chloride

"Our Business is making tough pumping jobs simple."

WILDEN PUMP® & ENGINEERING CO.

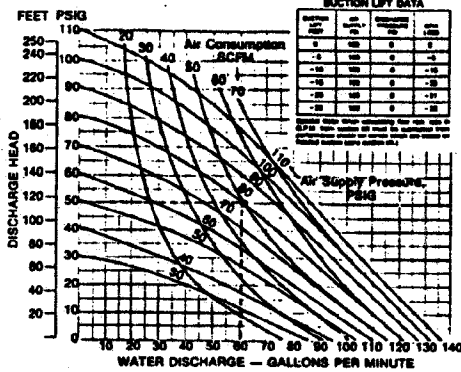
22069 Van Buren Street / Colton, CA 92324 / (714) 783-0621 / Telex (714) 676-452

SPECIFICATIONS & PERFORMANCE

WILDEN® MODEL M-8®

Height 30 1/2"
Width 19 1/2"
Depth 13 1/2"
Weight
..... POLYPROPYLENE 60 lbs.
PVDF 100 lbs.
Air Inlet 1/2" N.P.T.
Inlet 2" Flanged
Outlet 2" Flanged
Suction Lift 20' Dry
25' Wet
Max. Size Solids 1/4" Dia.

Example: To pump 60 gpm against a discharge pressure of 50 psig, requires 80 psig and 50 scfm air consumption.
CAUTION: Do not exceed 125 psig air supply pressure.

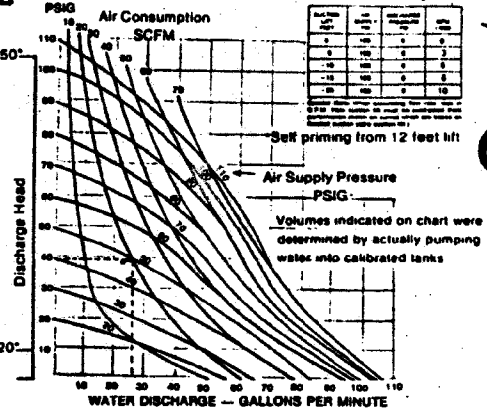


SPECIFICATIONS & PERFORMANCE TEFLON DIAPHRAGMS

WILDEN® MODEL M-8®

Height 30 1/2"
Width 19 1/2"
Depth 13 1/2"
Weight
..... POLYPROPYLENE 60 lbs.
PVDF 100 lbs.
Air Inlet 1/2" N.P.T.
Inlet 2" Flanged
Outlet 2" Flanged
Suction Lift 12' Dry
18' Wet
Max. Size Solids 1/4" Dia.

Example: To pump 38 gpm against a discharge pressure of 40 psig, requires 50 psig and 30 scfm air consumption.
CAUTION: Do not exceed 125 psig air supply pressure.



The Wilden "Champ" introduces a new dimension in handling corrosive, abrasive, or viscous liquids and slurries for the Chemical Process Industry. Engineered in response to your requests for a reliable, non-metallic, sealless, positive displacement pump, the "Champ" adds emphasis to the versatility of the Wilden Air Operated Diaphragm Pump line.

RELIABILITY, CORROSIVE RESISTANCE, AND SAFETY were key words in the "Champ" Research and Development Program.

RELIABILITY was insured by the decision to build the non-metallic wetted parts around the proven Wilden Air Valve System, and to incorporate the time tested Wilden M8 diaphragms in the "Champ" design.

CORROSIVE RESISTANCE centered on selection of materials. Wilden engineers spent many months analyzing the broad range of available thermoplastic, thermoset, and other non-metallic equipment and evaluation of their field experience as well as discussions with material suppliers and plastics fabricators led to the selection of PVDF and Polypropylene as the most suitable materials to complement the versatile Wilden Diaphragm Pump System.

POLYPROPYLENE has good chemical resistance, moderate heat resistance, and exceptional flex fatigue resistance at a reasonable cost.

PVDF (polyvinylidene fluoride), while higher in cost, offers exceptional chemical resistance, higher temperature resistance, and excellent mechanical properties.

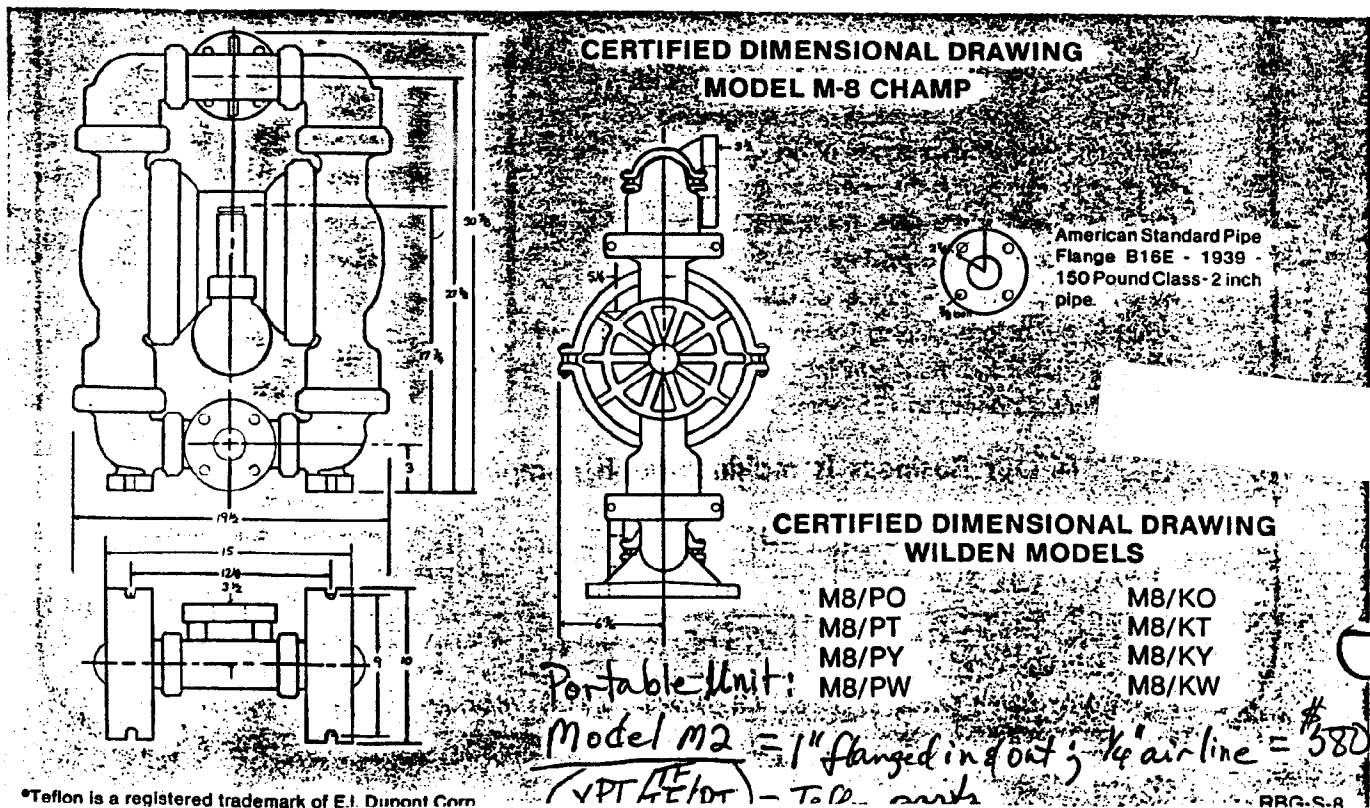
These materials in combination with either the patented Wilden Teflon® diaphragm or any one of four elastomeric materials offer the broadest possible range of compatibility with chemicals and solvents.

SAFETY is evident in the rugged appearance of the "Champ". The massive ribs of the water chambers, the large flanges with sturdy, specially designed stainless steel clamp bands, and thick wall sections are testimony to the efforts of Wilden engineers.

We proudly present the "Champ", a pump we build with care and pride to handle your most difficult assignments. We ask your cooperation in carefully selecting the appropriate materials for your specific applications. Many factors affect the chemical and mechanical properties of materials. These include, but are not limited to exposure time, extremes of temperature and pressure, frequency of temperature and/or pressure cycling and attrition due to abrasive particles. Wilden Air Diaphragm Pumps are also available in four sizes in Aluminum, Cast Iron, 316 Stainless Steel and Hastelloy C® for those applications where polypropylene and PVDF are not appropriate.

TEMPERATURE LIMITS: Polypropylene 150°F; PVDF 200°F

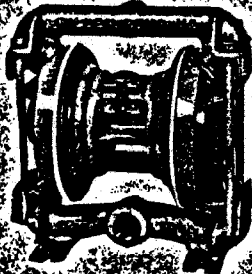
CAUTION: Maximum temperature limits are based upon mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperatures. Consult engineering guides for chemical compatibility and temperature limits.



Effective Date April 1, 1983

WILDEN PUMP & ENGINEERING CO.

22069 VAN BUREN STREET, P.O. BOX 845, COLTON, CALIFORNIA 92324 / (714) 783-0621

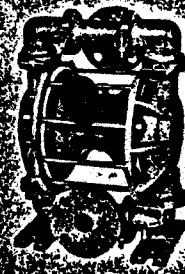


M-2/00

MODEL M-2 PUMPS

**Simplicity
Performance
Versatility
Reliability**

Max. Size Solids 1/2" Dia.
CAUTION: Do not exceed 125
psig air supply pressure.



M-2/P

(Suggested U.S. Price Lists)

Model Inlet Hsg.	Materials of Construction		Inlet/ Outlet	Max. GPM	Dimensions			Approx. Wt. Lbs.	Suggested Price FOB Colton, CA
	Wetted	Non-Wetted			Height	Width	Depth		
M2/00	Alum./Steel	Brass/Steel	1" 3/4"	30	10 1/2"	10 1/2"	7"	22	345.00
M2/BO*	Aluminum/ S.S.	Brass/Steel	1" 3/4"	30	10 1/2"	10 1/2"	7"	22	425.00
M2/SO	316 S.S.	Brass/Steel	1" 3/4"	30	10 1/2"	10 1/2"	7"	34	715.00
M2/HO	Hastelloy "C"	Brass/Steel	1" 3/4"	30	10 1/2"	10 1/2"	7"	34	1765.00

Model M2 Pumps with Teflon Diaphragms, Teflon Ball Valves, and Teflon Valve Seat O-rings.

M2/TO	Alum./Steel	Brass/Steel	1" 3/4"	25	10 1/2"	10 1/2"	7"	22	525.00
M2/BT*	Aluminum/ S.S.	Brass/Steel	1" 3/4"	25	10 1/2"	10 1/2"	7"	22	575.00
M2/ST	316 S.S.	Brass/Steel	1" 3/4"	25	10 1/2"	10 1/2"	7"	22	895.00
M2/HT	Hastelloy "C"	Brass/Steel	1" 3/4"	25	10 1/2"	10 1/2"	7"	22	1945.00

Model M2 Polypropylene (P) Pumps, Including Models with Teflon Diaphragms

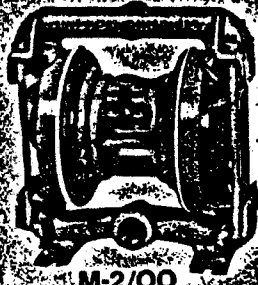
M2/PO	Polypropylene glass filled	Brass/Steel	1" 1"	30	14"	10 1/2"	8 7/16"	20	465.00
(XPT) M2/PT	Polypropylene glass filled	Brass/Steel	1" 1"	25	14"	10 1/2"	8 7/16"	20	645.00
M-2 diaphragms & balls	Neoprene Buna-N Nardel Teflon								

* Alloy Model Pumps are fitted with S.S. Manifold Nipples and Outer Piston Plates.

NA: Not available

WILDEN PUMP & ENGINEERING CO.

22069 VAN BUREN STREET, P.O. BOX 845, COLTON, CALIFORNIA 92324 / 714 783-0621



M-2/OO

MODEL M-2

WILDEN DIAPHRAGM PUMP

Factory Built
Elastomer Options Available

(Suggested U.S. List Prices)



M-2/P

METALLIC PUMPS

Factory Built Elastomer Options	Diaphragms	Valve Balls	Valve Seat O-Rings	Add
M2/_/NE/NE/AL	Neoprene	Neoprene	Buna-N	Standard
M2/_/NE/TF/_	Neoprene	Teflon	Buna-N	\$24.00
M2/_/BN/BN/_	Buna-N	Buna-N	Buna-N	25.00
M2/_/BN/TF/_	Buna-N	Teflon	Buna-N	39.00
M2/_/ND/ND/_	Nordel	Nordel	Nordel	35.00
M2/_/ND/TF/_	Nordel	Teflon	Nordel	51.00

NOTE: Any combination of elastomers may be ordered; ask for price. Add \$30.00 to suggested list price for Teflon Valve Balls, and \$30.00 for 316 S.S. seats.

NOTE: Valve seat O-rings are of the same materials as pump diaphragm - except pumps with Neoprene diaphragms have Buna-N O-rings (90B).

NOTE: Valve seats will be of the same material as the pump wetted parts.

POLYPROPYLENE PUMPS

Factory Built Elastomer Options	Diaphragms	Valve Balls	Valve Seat O-Rings	Add
M2/P/NE/NE/PN	Neoprene	Neoprene	Buna-N	Standard
M2/P/NE/NE/PT	Neoprene	Neoprene	Teflon	\$8.00
M2/P/NE/TF/PT	Neoprene	Teflon	Teflon	32.00
M2P/BN/BN/PN	Buna-N	Buna-N	Buna-N	27.00
M2/P/ND/ND/PT	Nordel	Nordel	Teflon	47.00
M2/P/ND/TF/PT	Nordel	Teflon	Teflon	57.00

* Plastic pumps fitted with Neoprene or Buna-N diaphragms have Buna-N valve seat/manifold O-rings. Those with Nordel diaphragms have Teflon valve seat/manifold O-rings.

RETROFIT TEFLON CONVERSION KITS

(Includes Teflon diaphragms and balls, valve seat O-rings, back-up diaphragms, shaft, inner and outer pistons)

	P/N	Price
Aluminum Models - Not Available		
316 Stainless Steel Models	RSTF83	\$360.00
Hastelloy "C" Models	RHTF83	\$475.00

NOTE: Model M-2 pumps are shipped complete with muffler.

NOTE: Model M-2 pumps do not have a self-contained lubricator.

MISCELLANEOUS OPTIONS

Muffler (70C)	each	\$11.50
Expanded Teflon Gasket Kit P/N TF2GK	each	25.00
Orange Paint - 12 oz. Spray Can	net	5.00
Orange Catalog (for customer distribution)	net	4.00
Tannergas, T-190 In-Line Dispenser P/N TGT-190	each	180.00
Freeze Ban, 1 quart container P/N TG-FB1QT	each	5.00
Tannergas, 5 gallon container P/N TG-5GAL	each	60.00
No-Tox, 5 gallon container P/N TG-NT5GAL	each	80.00
Automatic Powder Valve P/N APV	each	84.00

RBG - P - 1

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McK00059

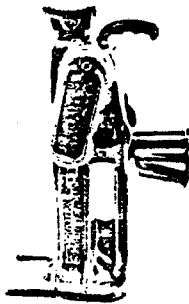
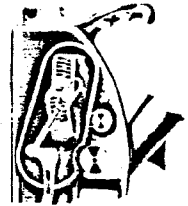
DUFF-NORTON RATCHET JACKS

CHEM OP 10.20 Exhibit 4
9/15/85 9/15/85

Outstanding Features

Exclusive, patented spring mechanism is a one-piece, self-contained unit. It can be adjusted, repaired or replaced easily, without dismantling jack. Load is raised or lowered one notch at a time—down stroke for raising and up stroke for lowering.

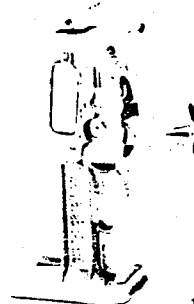
Jacks cannot be tripped when under load. Rack bars can be pulled up by hand to meet the load. Covers are recessed in housing, to protect lifting mechanisms. Fulcrum centers are located for utmost speed and ease of lifting.



514-MT
516-MT
521-MT

5 TONS – Single-acting, ratchet-lowering with foot lift. Furnished with high-strength heat-treated, double round sockets and steel operating lever 1" x 30". When jack is not under load, head can be dropped or tripped instantly.

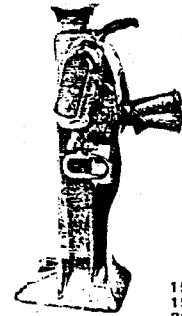
USES – For moving, lifting and bracing lighter loads of all kinds. Because rack bar can be dropped after load is removed – a time-saving feature – this jack is popular for rerailing mine cars and locomotives.



1022-A

10 TONS – Aluminum single-acting, ratchet-lowering, with foot lift. Furnished with double round sockets and steel operating lever 1 1/4" x 60".

USES – For moving and repairing all types of machinery, road building equipment, streetcar trucks, bolsters and couplings on freight cars, and for erecting drilling rigs, beams, concrete forms, shoring.



1522
1528
2028

15 TONS – Single-acting, ratchet-lowering, with foot lift. Double round sockets and steel lever bar are standard.

USES – For industrial plants, mills, mines, contractors, railroads, riggers, truckers, public utilities, machine shops. A heavy-duty all-purpose jack for lifting, lowering, holding and moving all kinds of loads.

20 TONS – Single-acting, ratchet-lowering, with foot lift, double round sockets and steel lever 1 1/4" x 60".

USES – The heaviest, strongest, most powerful Duff-Norton ratchet lowering jack. Ideal for the most difficult lifting, holding, moving and lowering jobs in mills, mines, railroads, public utilities plants and contractor operations.

JACK SPECIFICATIONS Ratchet Jacks

Product Code	00203	00205	00207	00209	00211	00213	00215
Jack No.	514 MT	516 MT	521 MT	1022-A	1522	1528	2028
Capacity Tons	5	5	5	10 TOP 5 TOE	15 TOP	7 1/2 TOE	20 TOP 10 TOE
Height Inches	14	16	21	22	22	28	28
Raise Inches	7 1/2	9 1/2	14 1/2	12 1/2	11 1/2	17 1/2	18
Base Inches	5 1/2 x 7 1/2	5 1/2 x 7 1/2	5 1/2 x 7 1/2	7 x 10 1/2	8 x 11	8 x 11	8 x 11
Head Inches	2 1/2 x 2 1/2	2 1/2 x 2 1/2	2 1/2 x 2 1/2	3 x 3	3 x 3 1/2	3 x 3	3 x 3 1/2
Foot Lift Ht. Inches	0	1 1/2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Weight Pounds	36	41	47	65	100	117	126
Rack Size	1 1/2 x 1 1/2	1 1/2 x 1 1/2	1 1/2 x 1 1/2	1 1/2 x 1 1/2	1 1/2 x 2 1/2	1 1/2 x 2 1/2	1 1/2 x 2 1/2

Curved tops are now standard

Also from Duff-Norton: RAM-PAC® HYDRAULIC EQUIPMENT FOR PRODUCTION AND MAINTENANCE JOBS.

Duff-Norton offers a complete line of hydraulic rams, pumps, and accessory equipment for a wide range of industrial applications.

Single-Acting Rams—In 19 models with rated capacities from 5 to 100 tons. Designed for maximum travel in relation to closed height. Of high-strength materials, with fewer working parts for less maintenance.

Double-Acting Rams—Nine models, rated 10 to 100 tons capacity. Provide more travel than other rams with same closed height. Retract under hydraulic power for pulling.

Center-Hole Rams—Four sizes, rated 10 to 60 tons. Hollow piston holds rods, cables and other accessories; convertible with use of optional piston saddles. In single-acting and double-acting types.

Pumps—Manual pumps, and electric, air or gasoline-engine powered models to meet every ram arrangement and operating condition.

Complete Ram-Pac Units—In 32 models, from 5 to 100 tons. Provide a portable, remotely controlled power source consisting of ram, hand pump, hose and couplings.

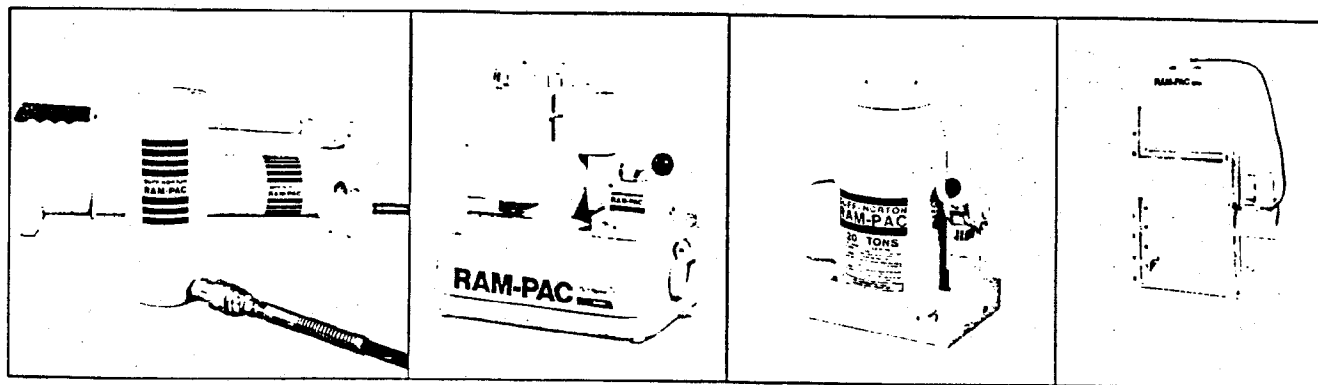
Complete Maintenance Kits—Rated 4, 10 or 20 tons capacity, each kit consists of a ram, pump, hose, couplings and accessories for a variety of maintenance jobs. Includes heavy-duty storage box.

Integral Ram-Pac Units—Combine ram and pump in one compact package. Easy to transport, simple to use. In 14 models, rated 1½ to 100 tons lifting capacity.

Hydraulic Press Frames—In 21 heavy-duty models rated 10, 30 and 50 tons. Rigid structural steel frame permits loading from both sides. Unique lifting mechanism moves bed smoothly from maximum to minimum throat. Can be supplied with manual, air or electric pump.

A wide range of accessories and attachments permit assembly of systems for lifting, pushing, spreading, bending, clamping, straightening, and other production and maintenance jobs.

For further information, see your local Duff-Norton Distributor or write for free Ram-Pac Catalog 176.



WARNING: The equipment shown in this catalog is intended for industrial use only and should not be used to lift, support, or otherwise transport human cargo.

AVAILABLE FROM YOUR LOCAL LIFTING PRO:

Duff-Norton Company, P.O. Box 32605
Charlotte, North Carolina 28232
(704) 588-0300 Telex: 575188

The Canadian Duff-Norton Company, Ltd., 15 Lockport Avenue,
Toronto, Ontario M8Z 2R6 (416) 239-3525 Telex: 06967601

Branch Offices:

1278 West Ninth Street, Cleveland, Ohio 44113
(216) 781-4232 Telex: 980187

801 Pratt Boulevard, Elk Grove Village (Chicago), Illinois 60007
(312) 439-8866 Telex: 253765

480 Coney Island Drive, Sparks (Reno), Nevada 89431
(702) 331-1111 Telex: 354457

EMHI
THE NATIONAL MATERIALS INSTITUTE INC.
MEMBER COMPANY

Catalog 207
Printed in U.S.A.
10/11/1980/090

McK00061



Hose Handling Slings

Lift-All Hose Handling Slings are designed for OS&D operations and should be used in choker hitch only. These slings will support hose, distributing the load evenly, thus minimizing kinking and cutting. If used for other than OS&D work, please contact Lift-All for additional information. Nylon construction unless other material is specified.

CHEM OP 10.20 Exhibit 5
9/15/85 9/15/85

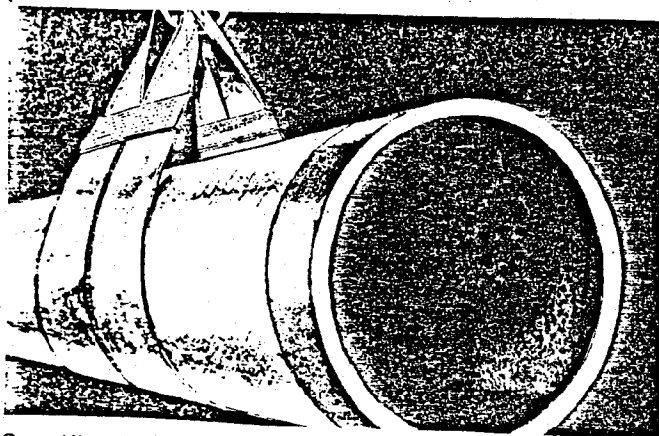
Specifications

Hose Diameter	Body Web Width	Sling Length	Choker Capacity In Lbs.	List Price
4"	4"	3' - 6"	3,000	\$ 30.40
6"	6"	4' - 0"	4,000	35.45
6"	6"	4' - 6"	4,000	36.60
8"	8"	6' - 0"	5,000	62.20
10"	10"	9' - 0"	6,000	96.90
12"	12"	11' - 0"	7,000	121.40

Wide-Lift Slings

CONTINUOUS EYE WIDE-LIFT

All Wide-Lift Slings are basket hitch slings that distribute the load over a wide area and give good balance to extra large and heavy loads. They are constructed from an endless sling with the two length stitched side by side.



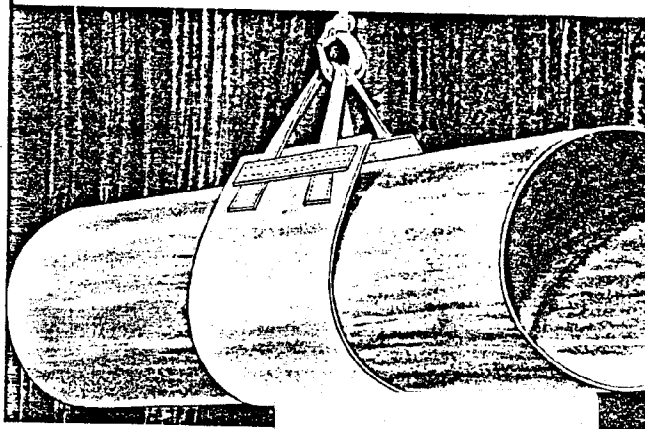
Specifications

Sling Width	Code Number	Basket Hitch Capacity in Lbs.	Base Price 3' lg. Sling	Add per Foot
6"	WL1-806	15,400	\$ 35.10	\$ 6.05
6"	WL2-806	23,600	57.90	10.10
8"	WL1-808	20,400	43.30	7.30
8"	WL2-808	38,000	71.40	12.60
10"	WL1-810	25,600	54.35	8.90
10"	WL2-810	47,600	89.65	15.20
12"	WL1-812	30,800	74.90	10.80
12"	WL2-812	57,200	123.65	18.45
16"	WL1-816	38,000	101.50	15.75
16"	WL2-816	61,500	167.40	29.00
20"	WL1-820	45,000	128.55	20.05
20"	WL2-820	63,000	212.15	37.65
24"	WL1-824	52,000	160.70	24.25
24"	WL2-824	70,000	264.90	46.75

Note: Normal eye length is 1 1/2 times body width.

ATTACHED EYE WIDE-LIFT

Attached-Eye Wide-Lift Slings are to be used in basket hitch with light loads and wide bearing areas. The eyes are made from separate material to accommodate small crane hooks.



Sling Width	Code Number	Basket Hitch Capacity in Lbs.	Base Price 3' lg. Sling	Add per Foot
6"	WLA1-806	3,000	\$ 29.70	\$ 6.05
6"	WLA2-806	6,000	32.65	6.05
8"	WLA1-808	3,000	35.50	7.30
8"	WLA2-808	6,000	38.40	7.30
10"	WLA1-810	3,000	42.90	8.90
10"	WLA2-810	6,000	45.80	8.90
12"	WLA1-812	3,000	56.20	10.80
12"	WLA2-812	6,000	59.10	10.80
16"	WLA1-816	5,000	75.10	15.75
16"	WLA2-816	10,000	79.35	15.75
20"	WLA1-820	5,000	92.50	20.05
20"	WLA2-820	10,000	96.80	20.05
24"	WLA1-824	5,000	112.50	24.30
24"	WLA2-824	10,000	116.80	24.30

CAUTION: DO NOT EXCEED RATED CAPACITIES

YOUR LIFT-ALL SLING DISTRIBUTOR IS A PRO.

Our sling distributors are well qualified to help you with your selection and application. Many Lift-All nylon and polyester web slings — excepting specially designed types and wire mesh slings — are often available off the shelf through your local sling distributor. For prompt sling information, sales and service, contact the Lift-All distributor, see the Yellow Pages or write us for his name.



MANHEIM, PENNSYLVANIA 17545
PHONE (717) 665-6821



Specify Lift-All slings for all your lifting needs. If it's not in our catalog we'll make it to your specifications.

BRANCH PLANTS

Atlanta Division
1750 Young Court
Norcross, Georgia 30093
Phone (404) 449-1606

Hartford Division
Industrial Park Avenue
Vernon, Connecticut 06066
Phone (203) 872-7375

Chicago Division
151 Wilson Court
Bensenville, Illinois 60106
Phone (312) 595-1720

Houston Division
16803 Hedgecroft Drive
Houston, Texas 77060
Phone (713) 445-2256

Los Angeles Division
16639 Valley View
Cerritos, California 90701
Phone (213) 404-2711

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Seller warrants that its goods are free from defects in materials and workmanship. Accordingly, Seller's liability is limited to replacing without charge or refunding the purchase price, or making fair allowance for any noncompliance with any specifications or any defects in materials or workmanship in its products existing at the time of delivery. Seller requires written notice and the return of the product to establish any claim. SELLER MAKES NO OTHER WARRANTY OF ANY KIND WHATEVER, EXPRESS OR IMPLIED, AND ALL IMPLIED

WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE ABOVE OBLIGATION ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED. Seller will not be liable for any consequential damages, loss or expense arising in connection with the use or inability whatever, regardless of whether damage, loss, or expense results from any act or failure to act by Seller, whether negligent or willful, or from any other reason.

SHIPPERS SUPPLY, INC.
Pelham Road Industrial Park
Rt. 5 Greer, S. C. 29651
Phone 237-3424
S. C. WATS 1-800-922-2376

McKesson Operations

Section	Reference	Page	End
GENERAL SAFETY	10.21	1	
Subject	Issue Date	Effective Date	
EMERGENCY PRESS RELATIONS POLICY - FIELD LOCATIONS	9/15/85	9/15/85	

PURPOSE To establish a policy and procedure for handling emergency press relations at field locations.

BACKGROUND The possibility of serious accidents, acts of God, disasters, fires or other injury or death-causing incidents or those involving substantial material loss must be considered. Whenever these situations occur, there is a distinct likelihood of an inquiry or personal visit by media representatives. It is important to follow a proper procedural sequence so that Home Office Chemical may marshal the proper Corporate resources should they be needed.

ACTION In the event of an emergency such as described, the following procedures apply:

1. If the accident occurs away from the work location, the Emergency Coordinator or alternate should be notified as soon as the situation allows. If the accident occurs at the work location, the Emergency Coordinator or alternate will be in charge and assume the responsibilities of handling emergency press relations following the guidelines below.
2. The Emergency Coordinator is responsible for promptly advising Home Office Chemical, Area and Regional offices, as well as proper governmental agencies.
3. Home Office Chemical will, in turn, advise and solicit advice from Corporate Public Relations regarding the incident.
4. Listed below are day numbers and night numbers for initial contact with Home Office Chemical. The first name should be called first. In his absence, call in descending order. One should be available for the emergency notification:

McKesson Operations

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EMERGENCY PRESS RELATIONS POLICY - FIELD LOCATIONS	9/15/85	9/15/85	

ACTION (Cont.)

MCC

Dick A. Davis	415-983-9019
Morrison A. Minor	415-983-8642
Barry B. Blocker	415-983-8342
George E.	
Constantino, Jr.	415-983-8581
Jon W. d'Alessio	415-983-8677

MEC

Dave J. Schoonmaker	415-983-8343
Barry B. Blocker	415-983-8342
George E.	
Constantino, Jr.	415-983-8581
Jon W. d'Alessio	415-938-8677

MES

George N. Butter	415-828-1446
M. Dale Sands	415-828-1446
Barry B. Blocker	415-983-8342
George E.	
Constantino, Jr.	415-983-8581
Jon W. d'Alessio	415-983-8677

EVENINGS

Privacy Act

- To avoid the possible spread of misinformation and false rumors by employees, as well as recognizing that enterprising reporters will seek out information regarding an emergency from employees, it will be the responsibility of the Emergency Coordinator to brief the employees utilizing the guidelines given below.

PREPARATION

Home office contacts will provide initial counsel and assistance as the situation dictates. To facilitate the flow of factual information, a caller should be prepared to render the following.

WHO - is (was) involved
WHAT - took place
WHERE - location
WHEN - date/time (time zone of occurrence)

McKesson

Operations

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EMERGENCY PRESS RELATIONS POLICY - FIELD LOCATIONS	9/15/85	9/15/85	

RESPONSE GUIDELINES

If circumstances prevail that the Emergency Coordinator or alternate does not have access or contact with the Home Office numbers provided, it then becomes that person's responsibility to take the initiative in handling emergency press relations appropriately and in accordance with the following general guidelines:

1. If the emergency involves local fire, police, or hospital authorities and is likely to be reported in the press, it is usually to the advantage of the Company to give the press a brief statement of the facts without waiting to be asked in order to prevent rumor and distortion of the facts. (A possible exception to this: in the case of a bomb scare where no explosion resulted, the spokesperson should not initiate press contact, but should be prepared to respond in the event of press inquiry.)
2. Spokespersons are cautioned not to speculate or give opinions on cause, cost, or other information relating to an emergency. Stick strictly to the facts that can be disclosed. Avoid providing any comment that could be construed to be an accusation, the fixing of blame, or a liability on the Company, its employees, or upon outsiders involved in the incident.
3. In times of disaster, reporters and photographers desiring admittance to a company facility should be escorted to an administrative area and provided a place to work and make telephone calls. Media and camera crews may be escorted to the damaged area as soon as public safety officials say it is safe to do so. However, persons allowed on Company property should be escorted at all times while on the premises outside the administrative area. Pre-select an administrative area in advance of an incident.

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EMERGENCY PRESS RELATIONS POLICY - FIELD LOCATIONS	9/15/85	9/15/85	

RESPONSE
GUIDELINES
(Cont.)

4. Allow news and TV photographers to take pictures unless it violates security. Do not try to interfere with the taking of photographs from outside the Company property, since there is no legal right to do so.
5. If reporters cannot get the straight facts from you, they can get at least some of them readily (but second hand) from the police, the coroner, hospitals, and the fire department -- agencies they readily contact. If reporters have to try to pry "facts" from some bystander who more than likely doesn't know of the facts (but is usually delighted to talk anyway), the story could be highly colored and inaccurate. Hence it could do you and the Company much harm.
6. The wrong answer, or a too-hasty, curt, evasive, or off-the-cuff answer, could do harm to the Company and its good reputation with the public. Hence, it is highly advisable to prepare factual data for media inquiry. This does not imply "editorializing" anyone's personal slanting of straight facts.
7. No answer at all, or a blunt "no comment" is often the worst possible response. There is a general impression that behind the statement "no comment" hide the guilty, the frightened, or the intimidated. Of course, it's possible that a local manager cannot comment for publication on the matter in question, for any valid reason. If so, the issue becomes judgemental. Examples of alternatives to "no comment" are: "I can't provide you with an answer to that question at this time because I do not have all the facts"...or, "I can't comment on that because there are legal considerations"... or, "I don't feel that I'm qualified to make a comment on that, but I will try to get a comment from someone who is qualified."

McKesson
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Section	Reference	Page	End
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EMERGENCY PRESS RELATIONS POLICY - FIELD LOCATIONS	9/15/85	9/15/85	

RESPONSE
GUIDELINES
(Cont.)

What about "Off the record?" Reporters are looking for news, not confidences. For this reason, some reporters refuse to listen to "off the record" comments. It is advisable to stay "on the record" and consider anything you say accordingly.

8. Experienced reporters know that occasionally there are developments which must be kept confidential for a time. If you are in that kind of situation, explain fully and clearly the reason why the answer cannot be given, and assure reporters that as soon as it can be given for publication, you will call them.

For those relatively few questions which may involve matters of company or customer policy or confidential information of value to our competitors, explain why you cannot answer the question. Usually merely stating that the reasons are of Company or customer policy or are confidential and of value to competitors is sufficient.

9. If reporters want to quote you by name, there's usually no reason why they should not do so. But, if you'd rather not be quoted personally, they will generally go along with your request to remain anonymous as a "company spokesperson."

McKesson Operations

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GENERAL SAFETY	10.22	1	
Subject	Issue Date	Effective Date	
CHEMICAL CARGO EMERGENCIES - CHEMTREC	10/15/86	10/15/86	

PURPOSE

It is McKesson's intent to take first responsibility for its chemical cargo emergencies whenever possible, using additional assistance as required. The goal is fast response in order to keep our products inside their containers.

This section will describe CHEMTREC and McKesson's participation in it.

CARGO TANK EMERGENCIES

There are two types of chemical cargo emergencies:

Type I - occur on McKesson trucks and transports.

Type II - involve shipments handled by common or outside carriers.

Type I Procedure - The driver calls the Service Center or asks someone to do so. If the emergency occurs after hours, and Service Center personnel cannot be located at home, the driver contacts CHEMTREC (800-424-9300) and states the essentials of the problem.

Each truck should carry a CHEMTREC decal (p.7) on the dash and/or left-hand door, and the Service Center telephone number. These are for the convenience of the driver and others, if the driver is incapacitated.

Type II Procedure - To facilitate emergency response, the carrier's copy of each Bill of Lading should bear a stamp with the following:

"In case of an emergency, phone (Service Center number).

If no response, call CHEMTREC, 800-424-9300."

CALL LIST

When CHEMTREC is called in an emergency which may involve McKesson, they will notify one of the persons on the contact list we provide them. This list, organized by Region, is composed primarily of Service Center Operations, Area Operations, Regional Operations and Home Office Operations personnel.

McKesson Operations

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CHEMICAL CARGO EMERGENCIES - CHEMTREC	10/15/86	10/15/86	

CALL LIST

Changes in phone numbers and contacts should be directed to Home Office Operations which maintains this list and transmits it to Service Centers and CHEMTREC.

A Service Center may be contacted by CHEMTREC because it is the McKesson facility nearest to the site of an emergency, although it may not be the shipper or receiver. The Service Center is still responsible for taking appropriate action as the McKesson representative.

CHEMTREC - WHAT IT IS

CHEMTREC (Chemical Transportation Emergency Center) is a public service of the Chemical Manufacturers Association, Washington, D.C. It provides immediate advice for those at the scene of chemical emergencies. It then promptly contacts the shipper who provides more detailed assistance and appropriate follow-up. Since 1986, CHEMTREC also handles information for non-transportation emergencies.

CHEMTREC operates 24 hours a day, and may be reached toll-free at 1-800-424-9300.

WHAT IT IS NOT

CHEMTREC is not intended and is not equipped to function as a general chemical information source, but is confined to providing communications and initial emergency response information in chemical emergencies. Drivers should not call CHEMTREC on problems of any other nature.

MODE OF OPERATION

An emergency reported to CHEMTREC is received by the Communicator on duty, who records details in writing and by tape recorder. The Communicator attempts to determine the essentials of the problem such as:

- Name of caller and call back number
- Name of product
- Nature of problem
- Location of problem
- Shipper or manufacturer
- Container, type and quantity
- Railcar or truck number
- Carrier name
- Consignee
- Local conditions, i.e., weather, temperature, wind, population, terrain, airport location.

McKesson Operations

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CHEMICAL CARGO EMERGENCIES - CHEMTREC	10/15/86	10/15/86	

MODE OF OPERATION (Cont.)

Having advised the caller, the Communicator proceeds immediately to notify the shipper or chemical suppliers by phone about the known facts of the emergency.

Identification of product and shipper is important. Shipping papers are carried by truck drivers, and in engine or caboose of trains. Car and truck numbers and carrier names can be useful in tracing unknown cargoes.

CHEMTREC is a communication link which permits access to the Emergency Responders of shippers, suppliers, CHLOREP or the Pesticide Safety Team Network of NACA.

CHEMTREC stickers are available directly from Home Office Operations in the following sizes:

Size #1 - 1" x 4"

FOR HELP IN CHEMICAL EMERGENCIES

Involving *SPILL, LEAK, FIRE or EXPOSURE*

PHONE

Toll-Free • Day or Night

***800—424-9300**

Form No. 314-005-77



These can be used on dashboards of trucks, on clipboards, on or near telephones, etc.

Size #2 - 2" x 8"

To be posted on the inside of the truck door in a place where it may be read by someone on the ground.

Size #3 - 4" x 16"

These are designed primarily for trailers and buildings. Approval should be obtained from Area Operations before using on buildings.

McKesson
Operations

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Subject	Issue Date	Effective Date	
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WHAT IT
IS NOT

Because chemicals have such a wide range of uses and characteristics, persons working with them often have many questions regarding composition and purity, physical and chemical properties, effects on people and the environment, sources of supply, etc. It is important to understand, however, that CHEMTREC is not intended and is not equipped to function as a general chemical information source, but by design is confined to dealing with chemical transportation emergencies. Drivers should not call CHEMTREC on problems of any other nature.

MODE OF
OPERATION

CHEMTREC's purpose and WATS number have been widely circulated in professional literature distributed to emergency service personnel, carriers, and the chemical industry, and have been further circulated in bulletins of governmental agencies, trade associations, etc.

Shipping documents of participating companies are requested to include the following: "For help in chemical emergencies involving spill, leak, fire or exposure, call toll-free 800-424-9300 day or night."

An emergency reported to CHEMTREC is received by the Communicator on duty, who records details in writing and by tape recorder. The Communicator attempts to determine the essentials of the problem such as:

- Name of caller and call back number
- Name of product
- Nature of problem
- Location of problem
- Shipper or manufacturer
- Container, type and quantity
- Railcar or truck number
- Carrier name
- Consignee
- Local conditions, i.e., weather, temperature, wind, population, terrain, airport location.

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MODE OF
OPERATION
(Cont.)

This is to enable him to provide the best available information on the chemical(s) reported to be involved and give specific indication of the hazards and appropriate action. Information on various chemicals, as furnished by manufacturers, is within his easy reach. Trade names and synonyms of chemical names are cross-referenced for ready identification.

CHEMTREC's Communicators are not scientists. They are chosen for their ability to remain calm under emergency stress. To preclude unfounded personal speculation regarding a reported emergency, they are under instructions to abide strictly by the information prepared by technical experts for their use.

Having advised the caller, the Communicator proceeds immediately to notify the shipper by phone. The known particulars of the emergency thus relayed, responsibility for further guidance -- including dispatching personnel to the scene or whatever action seems warranted -- passes to the shipper.

Identification of product and shipper is important. Shipping papers are carried by truck drivers, and in engine or caboose of trains. Car and truck numbers and carrier names can be useful in tracing unknown cargoes.

Mutual aid programs exist for some products, whereby one producer will service field emergencies involving another manufacturer's product. In such cases, initial referral may be in accord with the applicable mutual aid plan rather than direct to the shipper. Arrangements of this sort are established on chlorine through the Chlorine Institute and on pesticides through the National Agricultural Chemicals Association.

The former has CHLOREP, the Chlorine Emergency Plan, in which the nearest producer or repackager responds to a problem. NACA has a Pesticide Safety Team Network of some 40 emergency teams distributed throughout the country. CHEMTREC serves as the communication link for both programs.

McKesson

Operations

Section	Reference	Page	End
GENERAL SAFETY	10.22	7	X
Subject	Issue Date	Effective Date	
CHEMICAL CARGO EMERGENCIES - CHEMTREC	9/15/85	9/15/85	


MODE OF OPERATION (Cont.)

Many individual companies have well organized response capabilities for their own products, some of which preceded CHEMTREC by several years (such as our own emergency response team). CHEMTREC does not seek to displace these, but rather collaborates with them and enhances their effectiveness. CHEMTREC's single telephone number affords this opportunity.

CHEMTREC stickers are available directly from Home Office Operations in the following sizes:

Size #1 - 1" x 4"

FOR HELP IN CHEMICAL EMERGENCIES
Involving *SPILL, LEAK, FIRE or EXPOSURE*
PHONE
Toll-Free • Day or Night
***800—424-9300** Form No. 314-005-77



* Add long-distance access number if required

These can be used on dashboards of trucks, on clipboards, on or near telephones, etc.

Size #2 - 2" x 8"

To be posted on the inside of the truck door in a place where it may be read by someone on the ground.

Size #3 - 4" x 16"

These are designed primarily for trailers and buildings. Approval should be obtained from Area Operations before using on buildings.

Section	Reference	Page	End
GENERAL SAFETY	10.30	1	
Subject	Issue Date	Effective Date	
INDEX TO ACCIDENT & INSURANCE CLAIMS REPORTING REQUIREMENTS	9/15/85	9/15/85	

	Reports Required	Manual References ¹
EMPLOYEE INJURY	<ol style="list-style-type: none"> 1. Accident Prevention Investigation (RM 100) 2. Loss Time Accident Report (if applicable) 3. Workers' Compensation (if medical expenses are incurred) 4. OSHA Log (No. 200) & Supplementary Record (No. 101) 	<ol style="list-style-type: none"> 1. Chem Op 10.31 2. Chem Op 10.31 3. Corp RIM 55.10 through 55.60; 70.60 & 70.61 4. Chem Op 10.56
VEHICLE DAMAGE (PASSENGER CAR OR DELIVERY VEHICLE)	<ol style="list-style-type: none"> 1. Accident Prevention Investigation (RM 100) 2. Property Loss (GA 443) 3. Liability Accident Notice Auto (CLM 221) 4. DOT Hazardous Materials Incident Report (F 5800.1) 5. DOT Motor Carrier Accident Report (MCS 50-T) 	<ol style="list-style-type: none"> 1. Chem Op 10.31 2. Corp RIM 10.40 & 40.10 3. Corp RIM 10.10, 10.20, 10.30 4. Chem Op 30.60 5. Chem Op 30.61

¹ Chem Op and Corp RIM are the Chemical Operations manual and the Corporate Risk & Insurance Management manual, respectively; the numbers are the sections in which the reporting and forms distribution procedures are described.

McKesson Operations

Section	GENERAL SAFETY	Reference 10.30	Page 2	End X
Subject	INDEX TO ACCIDENT & INSURANCE CLAIMS REPORTING REQUIREMENTS	Issue Date 9/15/85	Effective Date 9/15/85	

	Reports Required	Manual References ¹
DAMAGE TO McKESSON PROPERTY	<ol style="list-style-type: none"> 1. Accident Prevention Investigation (RM 100) 2. Property Loss (GA 443) 	<ol style="list-style-type: none"> 1. Chem Op 10.31 2. Corp RIM 10.40 & 40.10
DAMAGE TO OTHERS (INJURY OR PROPERTY)	<ol style="list-style-type: none"> 1. Accident Prevention Investigation (RM 100) 2. Liability Accident Notice Non-Auto (CLM 220) 	<ol style="list-style-type: none"> 1. Chem Op 10.31 2. Corp RIM 20.10
POTENTIAL FOR INJURY OR PROPERTY DAMAGE	<ol style="list-style-type: none"> 1. Unusual Incident Report 	<ol style="list-style-type: none"> 1. Chem Op 10.31

In addition to the above reports, a quarterly accident information summary is to be submitted to the Home Office Operations Analyst (Chem Op 10.31).

¹ Chem Op and Corp RIM are the Chemical Operations manual and the Corporate Risk & Insurance Management manual, respectively; the numbers are the sections in which the reporting and forms distribution procedures are described.

Section	Reference	Page	End
GENERAL SAFETY	10.31	1	
Subject	Issue Date	Effective Date	
ACCIDENT INVESTIGATION GUIDELINES - INDUSTRIAL ACCIDENTS	9/15/85	9/15/85	

GENERAL

Accidents must be reported and investigated as close to the time of occurrence as possible. In any case, the employee's statement should be made within 24 hours and the supervisor's report within 48 hours. If an accident resulted in death or serious injury to the employee, the report must be made within 24 hours.

The purposes of accident investigation are to:

1. Analyze each accident and determine its cause.
2. Prevent accidents through training of employees to eliminate unsafe practices and to be prepared to allow for mistakes, carelessness, and thoughtless actions of other employees.

All accidents are to be investigated in order to determine:

1. How was the injury or damage incurred -- exactly what happened and where?
2.
 - a. Under what accompanying or special circumstances did the accident occur? In other words, why?
 - b. Find all the contributing factors.
 - c. Effective investigation is, first of all, a fact finding job which requires, among other things, personal sincerity and honesty. Facts as they are found should be met and acknowledged face to face. An investigation should not be looked upon as a necessary evil but rather in its true light which is the opportunity to bring about better control of dangerous operating conditions.
 - d. Accident investigations must be thorough. Nothing can be assumed or taken for granted. Every alleged fact must be challenged until it is known exactly what happened which means, "Who did or did not do something and why?"

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Operations

Section	Reference	Page	End
GENERAL SAFETY	10.31	2	
Subject	Issue Date	Effective Date	
ACCIDENT INVESTIGATION GUIDELINES - INDUSTRIAL ACCIDENTS	9/15/85	9/15/85	

GENERAL
(Cont.)

3. After the details surrounding the occurrence of the accident have been reconstructed, then proceed to determine what should be done to eliminate or control the hazard or hazards that caused the accident.

HOW TO
INVESTIGATE
ACCIDENTS

1. The invariable cause of an accident is that someone did something that he should not have done or that someone failed to do something that he should have done. Do not be confused by such words as "machine failure," "man failure," and "unsafe physical conditions." Behind all these phrases is an unsafe act or failure to act on the part of somebody.
2. Obtain all the preliminary information regarding the accident, the person injured and the injury itself.

For instance, information may be needed regarding similar accidents that happened in the past; study the personnel and accident record of the person injured to obtain these facts.

3. An Accident Prevention Investigation Report, Form RM-100, (see Ref. 10.32, Exhibit 1)¹ will be completed on every accident by the Safety Coordinator or immediate supervisor of the injured employee. It is the responsibility of the Service Center Manager to see that constructive, effective action is taken toward reducing or eliminating the possibility of a recurrence. These reports should be maintained in a file folder. (Supplies of Form RM-100 are available from Forms Management.)

¹ The report form is the same for both industrial and vehicle accidents.

Section	Reference	Page	End
GENERAL SAFETY	10.31	3	X
Subject	Issue Date	Effective Date	
ACCIDENT INVESTIGATION GUIDELINES - INDUSTRIAL ACCIDENTS	9/15/85	9/15/85	

HOW TO
INVESTIGATE
ACCIDENTS
(Cont.)

4. Interview witnesses and discuss with the injured person, when available, the details regarding the occurrence of the accident, and obtain his recommendations for correcting the hazard which caused his injuries. He may know more and have better answers than anyone else.

Home Insurance and ESIS representatives will review the reports during their periodic visits and will discuss with Service Center executives ways of keeping industrial accidents at a minimum. These files must also be available for review by Department of Transportation and OSHA inspectors.

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Section	Reference	Page	End
GENERAL SAFETY	10.32	1	
Subject	Issue Date	Effective Date	
ACCIDENT INVESTIGATION GUIDELINES - PERSONAL INJURY AND VEHICLE ACCIDENTS	9/15/85	9/15/85	

GENERAL

Accidents¹ resulting in personal injury that require medical treatment other than first aid, and any vehicle accident resulting in property damage or personal injury, must be reported and investigated as close to the time of occurrence as possible. In any case, the employee's statement and the supervisor's report should be made within 24 hours. If an accident resulted in death or serious injury to the employee, immediately telephone VP Operations and Corporate Risk Management; a written report must be made within 24 hours.

The purposes of accident investigations are to:

1. Analyze each accident and determine its cause.
2. Develop recommendations and take appropriate actions to prevent accidents, by training employees to eliminate unsafe practices and to be aware of mistakes, carelessness, and thoughtless actions of other persons.

INVESTIGATION
PROCEDURES

To accomplish these objectives, the following accident investigation procedures are to be followed at all locations:

1. Reconstruct the event by examining the individual's actions in sequence; before, during and after the incident.
2. Closely examine the area where the accident occurred.
3. Interview and request written statements from the individual involved, various employee witnesses, and company physicians.
4. Determine the cause of the accident. Generally this can be classified by one or more of the following factors:

¹ See definitions in Reference 10.57.

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Operations

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GENERAL SAFETY	10.32	2	
Subject	Issue Date	Effective Date	
ACCIDENT INVESTIGATION GUIDELINES - PERSONAL INJURY AND VEHICLE ACCIDENTS	9/15/85	9/15/85	

INVESTIGATION
PROCEDURES
(Cont.)

Unsafe Conditions

a. Equipment

- Is it suitable for the operation?
- Does it have appropriate safeguards?
- Are maintenance schedules up-to-date?

b. Environmental

- Are visibility and noise levels comfortable?
- Are temperature and/or ventilation controls suitable?
- Is the working surface fatiguing or hazardous?

c. Process Arrangement

- Are bottlenecks present in the material flow or layout network?
- Are aisles blocked or obstructed?

Unsafe Acts

- Have established policies or work rules been violated?
- Did the incident occur as a result of improper or unauthorized use of equipment?
- Was performance of the task authorized?

Unsafe Personnel Factors

- Has the individual received updated training for the job task?
- Does the individual have qualifying skills and motor capabilities for the job task?
- Evaluate the individual's mental state: attentive, nervous, cooperative, etc.

Section	Reference	Page	End
GENERAL SAFETY	10.32	3	
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ACCIDENT INVESTIGATION GUIDELINES - PERSONAL INJURY AND VEHICLE ACCIDENTS	9/15/85	9/15/85	

INVESTIGATION
PROCEDURES
(Cont.)

It is absolutely essential that the root cause of the accident be identified. For example, a forklift accident might superficially be caused by a driver traveling at an unsafe speed, but the root cause may be a process bottleneck that disrupted the orderly and safe maneuvering of merchandise.

5. Develop recommendations to prevent future occurrences, specifically relating to:

- Company work rules, policies, and general procedures.
- Topics of training or safety programs.
- Repairs or modifications of equipment or operation to remove the hazardous condition.
- Personal protective equipment.
- Safety committee activities.

6. Set follow-up dates to assure timely implementation of the recommendations.

Upon completion of the investigation, present the report to the safety committee for their review, evaluation, and comments. Respond to the committee's suggestions and expedite the implementation of recommendations to achieve employee's receptive awareness.

REPORTING
PROCEDURES

At the Time of Occurrence

1. Prepare form RM 100 "Accident Prevention Investigation Report" (Exhibit 1). Retain one copy for location records.¹ Send one photocopy to the Area Operations Manager, along with necessary completed insurance forms (see Corporate Risk & Insurance Management manual). He will distribute copies to: VP Operations; regional office; and Corporate Risk Management.

¹ These files must be available for review by OSHA and DOT inspectors (see References 10.56, 30.60, 30.61).

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ACCIDENT INVESTIGATION GUIDELINES - PERSONAL INJURY AND VEHICLE ACCIDENTS	9/15/85	9/15/85	

REPORTING
PROCEDURES
(Cont.)

2. In addition to the above forms, if an occupational injury or illness resulted in loss of one or more full days from work, a Lost Time Accident Report & Investigation (Exhibit 2) must be prepared in duplicate within 24 hours of the incident. Retain one copy for location records and send the other copy to the area office for the required signatures. The completed form is then to be signed by the Regional Operations Manager and the Regional Vice President, who will forward copies to Home Office executives indicated on the form.

At the End of each Quarter

1. Prepare a Quarterly Accident Information Summary (Exhibit 3). Retain one copy for location records and send the other copy to the Area Operations Manager. He will assemble all location summaries and forward them to the Home Office Operations Analyst within 15 days after the close of each quarter.
2. The Operations Analyst will prepare and distribute company level and regional summaries to Corporate Risk Management as well as to appropriate Chemical Home Office and field personnel.

For Unusual Incidents

Prepare an Unusual Incident Report (Exhibit 4). Remember that the main purpose of this report is to prevent a recurrence of any abnormal operation. Be thorough in investigating the incident. The Regional Operations Manager will route your report to the other Regions so they may take preventative action.

Accident Prevention Investigation Report

Please Type or Print Clearly

M-Kesson

Injury Classification

☐ First Aid Only ☐ OSHA Recordable
☐ Lost Workday Case
(Estimated # days _____)

Location	Location Code No	Group/Company
----------	------------------	---------------

Accident investigations should be initiated as soon as possible after the incident. This investigation report should be used as a worksheet for evaluating the incident. The information collected should be useful for developing claims reporting data and recommendations to prevent recurrence of the incident. This report does not replace the reports that are required to be filed with claims administration organizations, or reports required by federal or state regulatory agencies. For reference see Procedure Manual "Guidelines for Conducting Accident Prevention Investigations".

Investigative interviews of non-employees should not be pursued beyond name, address and phone number.

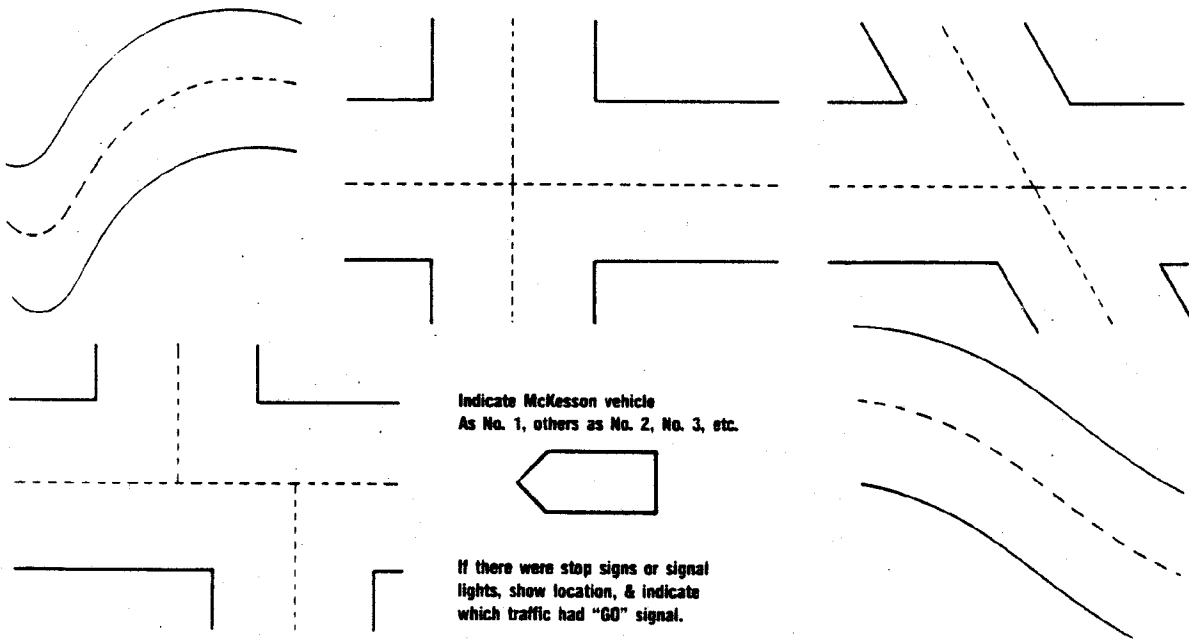
Photocopies of the report should be distributed to Corporate Risk Management and inter-company staff designated by group safety administrators.

Information to be Completed by Supervisor	Employee's Name		Age	How Long Employed?
	Occupation		Is This His (Her) Regular Occupation?	
	When Did Accident Occur?	Date	Time	Day of Week
	Where Did Accident Occur?			
	Give Exact Location If on Company Premises Show Department or Area			
How Did Accident Occur? Describe				
Acquire the attending physician's report and written statements from the employee involved and employee witnesses. Retain for the location file.				

Nature of Injury Describe

If Vehicle Accident, Use One of the Following Diagrams & Complete the Information Requested Below

Were the occupants wearing their seat belts? ☐ Yes ☐ No



Speed & Direction of Vehicles	No. 1 (McKesson)	No. 2	No. 3
Weather	Road Conditions		

Information to be Completed by Supervisor (cont'd.)	When Was Accident First Reported?		Time		To Whom Reported?	
	Was Medical Aid Required?		Was First Aid Rendered?			
	Describe the root cause of the accident. Include why.					
	Unsafe Conditions were present.					
	Unsafe Acts occurred.					
Safety Committee Review	Unsafe Personnel Factors existed.					
	Refer to: Guidelines for Conducting Accident Prevention Investigations					
	What recommendations were made to prevent future similar occurrences for this individual and other employees?					
Info. to be Completed by Location Manager.	By what date will recommendations be implemented?					
	Signature of Supervisor				Date	
	Safety Committee Review and additional recommendations					
Info. to be Completed by Location Manager.	The Supervisor's Suggestion Has Been Carried Out		Date		The Supervisor's Suggestion Should Be Carried Out	
					Proposed Date	
	The Supervisor's Suggestion Should Not Be Carried Out		Reason			
Comments and alternative or additional recommendations						
Have you suggested that these recommendations be implemented for other locations within your region or group?						
Signature of Location Manager				Date		

LOST TIME ACCIDENT REPORT & INVESTIGATION

McKesson

TO: B. B. Blocker, HOC FROM: Facility _____ No. LTA's FYTD* _____
M. A. Minor, HOC Area _____ No. LTA's FYTD* _____
D. A. Davis, HOC *Incl. this incident

ON: Employee _____ Date of Accident _____
Job Title _____ Time of Occurrence _____
Employment Date _____ Resulting Injury _____
Years on This Job _____ Estimated Time Lost _____
No. This FY: LTA's _____ WC's _____
No. Last FY: LTA's _____ WC's _____

Accident Details

1. Where did it occur? ☐ Our Plant ☐ Other (explain) _____
Any witnesses? ☐ No ☐ Yes (give names) _____
2. Where in the plant or location? _____
3. Name any specific equipment, machine, vehicle, etc. connected with or involved in this accident. _____
4. Describe what happened. _____

5. Accident cause: ☐ Unsafe act _____
☐ Unsafe condition _____
6. Why did this act occur or condition exist? _____

7. How can it be prevented in the future? _____

8. Who will implement this? _____ When? _____
9. Summarize doctor's findings. _____
10. Who spoke/corresponded with doctor? _____
11. Can injured be put on light/other duties? ☐ What? _____
12. What disciplinary action resulted? _____

Facility Operations Mgr. _____	Date _____	Area Director _____	Date _____
Facility Manager _____	Date _____	Regional Operations Mgr. _____	Date _____
Area Operations Mgr. _____	Date _____	Regional Vice President _____	Date _____

LOST TIME ACCIDENT DEFINED: An occupational injury or illness resulting in loss of one or more full days from work. Must be reported by the facility manager on this form within 48 hours of incident to the Area Office. Area Office will send to Region. Regional Vice President will forward in triplicate to Home Office. (Rev. 1/85)

McK00086

McKESSON CORPORATION
Chemical Group

QUARTERLY ACCIDENT INFORMATION SUMMARY

Location _____

Quarter Ended _____

Region _____

Date _____

I. Occupational Injuries & Illnesses

1. Number of Hours Worked _____
Calculate by using a 40-hour work week base per employee, plus hourly worker overtime, less vacations and holidays. Include ALL salary and hourly workers.
2. Number of OSHA Recordable Cases _____
(From Branch OSHA Log Posted for Qtr.)
Any injury resulting in loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment other than first aid.
3. Number of Lost Time Cases _____
Occupational injuries resulting in one or more full days away from work.
4. Total Work Days Lost _____

II. Vehicle Accidents

1. Passenger Vehicle Miles Driven _____
2. Number of Passenger Vehicle Accidents. _____
Specifically, all accidents in which a vehicle is involved, unless properly parked.
3. Truck Mileage Driven _____
4. Number of Truck Accidents. _____
Specifically, all accidents in which a truck is involved, unless properly parked.

Prepared by _____

Manager's Signature _____

UNUSUAL INCIDENT REPORT

_____ SPILL/POLLUTION _____ BRANCH: _____
_____ FIRE/EXPLOSION _____ REPORT DATE: _____
_____ LOSS OF MATERIAL/EQUIPMENT _____
_____ PERSONAL INJURY _____
_____ SAFETY VIOLATION _____
_____ ABNORMAL OPERATION/EQUIPMENT _____
_____ MISCELLANEOUS--EXPLAIN _____

TIME: _____ DATE: _____ DEPARTMENT: _____

SUPERVISOR _____

WHAT HAPPENED? (WHO, WHAT, WHEN, WHERE) _____

WHY? _____

HOW COULD THIS INCIDENT HAVE BEEN PREVENTED? _____

*RESULT OF THE INCIDENT: _____

*IF RESULT OF INCIDENT INVOLVES PERSONAL INJURY OR LOSS OF EQUIPMENT, MANAGER MUST
FILL OUT ACCIDENT REPORT FORM.

OPERATIONS MANAGER COMMENTS: _____

DISTRIBUTION: Area Operations Manager
Regional Operations Manager
File

OPERATIONS MANAGER'S SIGNATURE _____ DATE _____

McK00088

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.33	1	X
Subject	Issue Date	Effective Date	
ACCIDENT REPORTING GUIDELINES/DEFINITIONS	9/15/85	9/15/85	

GENERAL

Accident reporting is necessary to measure the success of a facility's safety program. Because we do not have infirmaries or professional medical services on our premises, all injury cases, whether they seem severe or not, are referred to a company doctor or an industrial clinic. The severity of an injury determines whether or not it is reported. To develop consistency and uniformity within the company, Exhibits 1 and 2 contain guidelines to help categorize "First Aid" type of injuries, as well as providing definitions of general terms used in safety reporting.

Accidents include vehicular and any other incident involving personal injury (employee or non-employee), but excluding first aid cases.

DEFINITIONS

1. Occupational (Work) Injury or Illness - Any death, injury or occupational disease suffered by a person which arises out of and in the course of his/her employment as a result of an incident or exposure, on or off the employer's premises, i.e., resulting from work activity or environment of employment.
2. Work Environment - The work environment is comprised of the physical location, equipment, materials processed or used, and the kind of operations performed in the course of an employee's work, whether on or off the employer's premises.
3. Recordable Cases - Deaths, injuries which require medical treatment (other than first aid), and illnesses.
4. Lost Time Accidents (or Lost Workday Cases) - An occupational injury or illness resulting in one or more full days absent from the workplace.
5. Lost Workday Cases - For the purpose of OSHA reporting (Form 200), lost workday cases include: a) Lost time accidents, b) Restricted activity, c) Temporary transfer to another assignment, and d) Working at the job less than full time.
6. Lost Workdays (Days away from work) - All days (whether consecutive or not) on which an employee is scheduled to work, but is absent because of occupational illness or injury.
7. Occupational Illness - Any abnormal condition or disorder such as dermatitis, rash, respiratory problem, poisoning, heat exhaustion, and hearing loss, caused by exposure to environmental factors associated with employment. Exposure may be caused by inhalation, absorption, ingestion or direct contact with dust, fumes, vapors or mists.

However, an allergic reaction to chemicals or dust is considered an illness only if the employee 1) receives medical treatment, 2) becomes a Lost Workday Case, 3) is transferred to another job, or 4) is terminated as a result of the allergic reaction.

DEFINITIONS

8. Vehicle Accidents - Any vehicle accident resulting in property damage or personal injury.
9. DOT Reportable Accidents - DOT reportable accidents are those involving injury, death, spills in reportable quantities, and/or damage to property aggregating \$2,000 or more. This does not include an occurrence involving boarding or alighting from a stationary truck, or loading or unloading. (DOT reportable accidents should be shown apart from truck injury accidents.)
10. LTA and Recordable Injury Accident Rate - The number of deaths, illnesses, and injuries per 200,000 workhours of exposure. (200,000 workhours' exposure is approximately the number of hours worked by 100 employees in one year. The basis for calculating rates is that of the Bureau of Labor Statistics.) All employees in the region are included in the reporting of hours of exposure.
11. Auto and Truck Injury Accident Rate - The number of injury accidents per 1,000,000 miles driven, excluding accidents where the vehicle is properly parked.

MEDICAL vs. FIRST AID

General

First Aid is limited to any one-time treatment and any follow-up visit for the purpose of observation of minor scratches, cuts, burns, splinters, etc., which do not ordinarily require medical care. First aid can be provided by a physician, nurse or other registered personnel.

Medical is treatment (see detailed analysis below) administered by a physician or nurse under the standing orders of a physician.

The detailed list which follows should be used in determining whether treatment is medical or first aid.

Detail

1. Prescription Medications - Use of medication specifically prescribed to treat an occupational injury or illness normally constitutes medical treatment.

However, it shall be considered first aid when a single dose or application of a prescription medication is given on the first visit. Tetanus booster injections are considered as a preventative treatment and are included as first aid, except when a reaction to the injection requires medical treatment.

2. Diagnostic Procedures

- a. Surveillance or Observation which reveals no injury or illness shall not be considered medical treatment.
- b. Hospitalization for Observation is not considered medical treatment where no medical treatment is rendered other than first aid.
- c. Physical Examination, Observation, or Surveillance not substantiating subjective complaints in questionable cases is not considered medical treatment.

MEDICAL vs. FIRST AID

3. Bone Fractures

An x-ray examination for fractures is considered a diagnostic procedure, therefore, constitutes neither first aid nor medical treatment. When the x-ray is negative, the case is non-recordable unless medical treatment is provided for supplementary injuries. All bone fractures are recordable medical treatment cases, except where all of the following criteria are met:

- a. The fracture is a hairline fracture.
- b. The fracture does not dislocate the bone.
- c. No splinting is required.
- d. The fracture does not interfere with the capability of the employee to do the normal duties of his job.
- e. No other medical treatment is provided.

4. Cuts and Lacerations

First Aid - Treatment limited to cleaning wound, soaking, applying antiseptic and/or first aid medication and bandaging on first visit. Follow-up visits limited to observation, including changing dressing and bandage. Additional cleaning and application of antiseptic permissible as first aid where required by work duties likely to soil bandage.

Medical Treatment - Injury requires stitches, cutting away dead skin, treatment of infection, or other professional treatment.

5. Abrasions

First Aid - Same as cuts and lacerations, except ointments can be added on follow-up visits to prevent drying and cracking of skin.

Medical Treatment - Injury requires careful examination for removal of embedded foreign material, multiple soaking, whirlpool treatment, treatment of infection, or other professional treatment. Any case involving more than a minor, spot-type injury; for example, abrasions occurring to greater than full skin depth are considered medical treatment.

MEDICAL vs. FIRST AID

6. Bruises

First Aid - Treatment limited to a single soaking or application of cold compresses on a minor bruise. Follow-up visits limited only to observation.

Medical Treatment - Injury requires multiple soaking or other extended care beyond mere observation.

7. Splinters and Puncture Wounds

First Aid - Treatment limited to cleaning wound, removal of foreign object(s) by tweezers or other simple techniques, application of antiseptics and first aid medications and bandaging on first visit. Follow-up visits restricted to observation of wounds, including minor first degree burns.

Medical Treatment - Injury requires removal of foreign object(s) by physician due to depth of penetration, size or shape of object(s) or location of wound. Also, injuries requiring treatment for infection, other professional treatment (assuming treatments are required as related to the injury involved).

8. Burns

First Aid - Treatment limited to cleaning or flushing surface, soaking, applying cold compresses, antiseptics and/or first aid medication and bandaging on first visit. Follow-up visits restricted to observation of wounds, including minor first degree burns.

Medical Treatment - Injury requires a series of treatments including soaks, whirlpool, cutting away dead skin, and application of medications. Most second and third degree burns and extensive first degree burns shall be deemed to require medical treatment.

9. Sprains and Strains

First Aid - Treatment limited to soaking, application of cold compresses, and use of elastic bandage on first visit. Follow-up visits for observation, including re-applying bandage.

Medical Treatment - Injury requires series of hot and cold soaks, use of whirlpools, diathermy treatment, or other professional treatment.

MEDICAL vs. FIRST AID

10. Eye Injuries

First Aid - Treatment limited to irrigation, removal of foreign material not imbedded in eye, and application of first aid medications. Precautionary visit (special examination) to doctor is still considered as first aid if treatment is limited to above items. Follow-up visits for observation only.

Medical Treatment - Cases involving removal of imbedded foreign objects, use of prescription medications or other professional treatment.

11. Inhalation of Toxic or Corrosive Gases

First Aid - Treatment limited to removal to fresh air or the one-time administration of oxygen for several minutes, prescription drugs for preventive reasons, and observation provided there is no positive diagnosis of injury.

Medical treatment - Any professional treatment beyond the above. All cases involving loss of consciousness.

McKesson
Operations

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GENERAL SAFETY	10.40	1	X
Subject	Issue Date	Effective Date	
AUDIO-VISUAL AIDS	9/15/85	9/15/85	

INTRO-
DUCTION

Films for accident and loss prevention training are available from both Corporate Loss Prevention (Exhibit 1) and Chemical Operations (Exhibit 2).

REQUEST
PROCEDURE

1. Send request to appropriate person as shown in the exhibits.
2. If the film is unavailable for the date(s) desired, the person ordering will be notified.
3. Return the film immediately after use, noting its condition. This is to assure availability for other locations.
4. Copy Area and Regional Operations Managers on all requests.

The following films are available from Corporate. Send request to:
Loss Prevention Coordinator, McKesson Corporation, One Post Street,
33rd floor, San Francisco, CA 94104.

<u>TITLE</u>	<u>FORMAT</u>
1. Backfire	VHS
2. The Best Defense	VHS
3. Safe and Awake	VHS
4. Rediscover the Safety Belt	VHS
5. Danger Zone...Your Back	VHS
6. Must We Fall?	VHS
7. Safety: A State of Mind	VHS
8. Making Meetings Mean Something	VHS
9. The "We" Approach to Safety	VHS
10. Horseplay? Horses Aren't That Dumb	VHS
11. Pre-flight Your Job	VHS
12. Keep It Clean	VHS
13. Finding a Cure for Accidents	VHS
14. Defusing the Conflict Bomb	VHS
15. It Can't Happen to Me	VHS
16. You're the Teacher	VHS
17. Are You Calling Me a Drunk?	VHS
18. Not by Accident	VHS
19. Safe Operation of a Forklift Truck	VHS
20. Minimizing Back Strain on the Job	VHS
21. The Point of No Return	VHS

The following films are available from Chemical. Send request to:
Operations Secretary, McKesson Chemical Company, One Post Street,
27th floor, San Francisco, CA 94104.

<u>TITLE</u>	<u>FORMAT</u>
1. Work Smarter Not Harder	VHS
2. Rediscover the Safety Belt	VHS
"CHEMSAFE" PROGRAM	
3. Introduction to Chemical Safety	VHS
4. Corrosives	VHS
5. Solvents	VHS
6. Oxidizers	VHS
7. Poisons	VHS
8. Gases	VHS
9. Explosives	VHS
10. Carcinogens	VHS
11. Avoiding Back Injuries	Audiscan Cartridge
12. Avoiding Back Injuries	Beta
13. Deadly Cargo	3/4"
"SAFE HANDLING" PRESENTATIONS	
14. DMF	3/4"
15. Formaldehyde	3/4"
16. Hydrogen Peroxide	3/4"
17. Methanol	3/4"
18. THF	3/4"
19. Emergency Drum Repair	Tape/Slide
20. Metro Survival	VHS

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Subject	Issue Date	Effective Date	
GOVERNMENT INQUIRIES	9/15/85	9/15/85	

PURPOSE These instructions state Corporate policy with regard to handling of inquiries from federal, state or local government agencies or other regulatory bodies.

POLICY It is the policy of the Corporation to cooperate to the fullest extent with all governmental bodies and to permit the examination of our facilities and pertinent Corporate records by authorized governmental representatives. Concurrently, the interests of the Corporation are to be fully protected.

JURISDICTION The Service Center Operations Manager has primary responsibility for handling government inquiries. In the Operations Manager's absence, the responsibility may be delegated to a responsible and knowledgeable employee of the Service Center. Be aware that, while it is not company policy to do so, you may deny entry to environmental inspectors unless they have a search warrant. Without such a warrant, an inspector is a guest in the plant, and we are under no obligation to answer questions or show any particular part of the plant. If you have any questions about a particular situation (e.g., whether it would be advisable to deny entry to an inspector without a warrant), contact the Chemical Group Counsel or other member of the Law Department, immediately.

DEFINITION An inquiry is intended to include every contact whether by letter, service of formal legal documents (i.e., summonses, subpoenas, etc.), telephone, telegraph, or personal visit. Examples of agencies from which such inquiries may come are:

The Department of Agriculture
Department of Transportation
Environmental Protection Agency
Food and Drug Administration
Drug Enforcement Agency
National Labor Relations Board

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DEFINITION (Cont.)

Wage and Hour Division
Equal Opportunity Commission
Occupational Safety and Health Administration
Federal Bureau of Investigation
Justice Department
Federal Trade Commission
Internal Revenue Service
Department of Health
State and local taxing authorities, local fire
departments
State Environmental Protection Agency, etc.

This list is informational only and is not intended to be all-inclusive.

PROCEDURE

1. Responsibility - Personnel

Governmental inquiries are to be handled by the Service Center Operations Manager or responsible employee to whom the authority has been delegated. In the absence of both, the person making the inquiry is to be advised of their absence and be asked either to return at a specified time or to leave his/her name, office, and telephone number so that the investigator may be contacted on their return. If an investigator will not cooperate (which is rare) and the Service Center Operations Manager cannot be reached, telephone the Company Operations Department or the Corporate Law Department for instructions.

2. Identification

Obtain the name of the investigator and the name, address and phone number of the investigating agency. Check his/her credentials for authenticity. If the inquiry is by telephone, ask to be permitted to return the call in five minutes. This permits the office to be properly identified on callback.

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Subject	Issue Date	Effective Date	
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PROCEDURE
(Cont.)

Only records relating to a specific type of inspection should be made available for examination by an inspector. If there is question about the authority of a person to see specific records, the Company Operations Department or the Corporate Law Department should be contacted for approval prior to making any material available.

3. Procedures

Governmental inquiries ARE NOT CONSIDERED ROUTINE. Investigations by the Justice Department, Federal Trade Commission, Environmental Protection Agency, and Federal Bureau of Investigation can be of an important nature and may involve questions of civil and/or criminal responsibility.

Request a pre-inspection conference prior to beginning the inspection. During the conference complete appropriate parts of the "Report of Government Inspection" (Exhibit 1). Ask the investigator to state the nature of the inquiry and the information desired. If the information is readily available, (i.e., bills of lading for hazardous materials shipment) release it for review. If the information is of a more complex nature (tax records, etc.) make a note, and advise that you will obtain the information and either call or write when it is available. If the investigator will not cooperate, call the Company Operations Department or the Corporate Law Department for instructions.

NOTE: When units of the Corporation are visited by Internal Revenue Agents or local tax authorities, the Corporate Tax Department is to be immediately notified by phone. No information is to be released to such agents or authorities without specific authorization by the Corporate Tax Department.

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Section	Reference	Page	End
GENERAL SAFETY	10.54	4	
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GOVERNMENT INQUIRIES	9/15/85	9/15/85	

PROCEDURE
(Cont.)

4. Providing Information

Only after a Service Center Operations Manager, or an authorized delegate, has approved or obtained approval (as specified above), may the investigation proceed. Only actual questions should be responded to. NO information is to be volunteered. If the answer is not known, the investigator should be advised. No conjecture should be given as to the possible answer. If documents are to be examined, only those absolutely necessary and SPECIFICALLY called for are to be presented.

If the investigator asks to take any documents, only copies are to be given; originals are to be retained. An additional copy of any documents given out should be made and attached to the "Report of Government Inspection" (Exhibit 1).

If the inquiry involves a series of questions and answers, a written summary should be made promptly and list, as accurately as possible, each question and answer. A copy of the statement should be attached to the "Report of Government Inspection" (Exhibit 1). If the inspector takes photographs, the McKesson representative should attempt to take duplicate photographs and/or request a copy. If the inspector takes soil or water samples at the facility, the McKesson representative should take (or request the inspector to take) split samples.

Request a post-inspection conference with the inspector. At this conference ask the inspector to summarize his/her findings and indicate the action, if any, to be taken.

5. Reporting of Inquiries

Following an inquiry, complete the "Report of Government Inspection" (Exhibit 1) and send it to the appropriate corporate office as indicated below.

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Subject	Issue Date	Effective Date	
GOVERNMENT INQUIRIES	9/15/85	9/15/85	

PROCEDURE
(Cont.)

Copies of documents furnished, or a statement of questions asked and answers supplied, should be attached. Attach copies of any written inquiry and any written response. Direct these reports as follows:

- a. AUDITS OR INQUIRIES BY INTERNAL REVENUE AGENTS, LOCAL TAX AUTHORITIES AND OTHER TAX INQUIRIES to the Corporate Tax Department.
- b. INQUIRIES RELATING TO PERSONNEL, LABOR MATTERS, WAGES AND HOURS, EMPLOYMENT DISCRIMINATION, SAFETY, ETC., to the Corporate Personnel Department.
- c. "Report of Government Inspection" (Exhibit 1) to the Vice President, Operations, at Home Office, San Francisco. The Operations Department will arrange for redistribution to individuals as indicated on the form.

TO: H. O. Operations
Regional Operations Manager
Area Operations Manager
Chemical Group Counsel

REPORT OF GOVERNMENT INSPECTION

McKESSON FACILITY: _____

Inspected By: ☐ State ☐ Federal ☐ Local
☐ OSHA ☐ EPA ☐ DOT ☐ Other

Visit Authorized By _____ Date Authorized _____

- INSTRUCTIONS:
- Send in the report immediately. Attach copies of any documents received or given. Do not delay transmittal if waiting for a follow-up written response. For additional details, use attachments.
 - Complete questions 1-7 during the pre-inspection conference.
 - Complete questions 8-13 during the post-inspection conference.
 - Complete questions 14-16 for all ENVIRONMENTAL Inspections.

1. Time and date of contact by representative(s): _____
2. Name(s) and title(s) of representative(s): _____

3. Credentials verified: _____ YES _____ NO, entry denied
4. Name of governmental agency, address and phone number at which representative(s) works: _____

5. Purpose of inspection: _____

Chem Op. 10.54
Exhibit 1
6/30/86
Page 2 of 4

For environmental inspections,

6.a. Will samples or other monitorings be taken? _____ YES _____ NO

b. If yes, request a receipt(s) for samples taken and request results of sampling analyses.

_____ receipts received

_____ results requested

_____ does not apply

7.a. Is the inspection the result of a complaint(s)?

_____ YES _____ NO

b. If yes, request a copy of the complaint(s).

_____ requested

_____ requested and received

_____ does not apply

Complete questions 8-13 as part of, or immediately after, the post-inspection conference.

8. Length of visit: _____

9. What prompted visit: _____

10. What specifically was inspected: _____

11. What records were requested: _____

12. What records were given: _____

13. Ask the government inspector to identify any potential problems observed.

☐ No response given
☐ Response to be mailed
☐ Potential problems specified:

Complete questions 14-16 for all ENVIRONMENTAL inspections.

- 14.a. Specify any pictures taken:

- b. Were duplicates of pictures taken by a Service Center representative ? ☐ YES (forward to Vice President, Operations)
☐ NO

15. Specify samples or other monitorings taken (i.e.: size, location, number, type of equipment used):

16. If possible, pull duplicate samples, logging the sample container with the time, date, location and name of person taking the sample. Immediately ship to McKesson Environmental Services, laboratory for archiving.

☐ Duplicate(s) pulled and shipped
☐ Unable to pull duplicates
☐ Does not apply

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17. Additional comments: _____

18. Recommendations: _____

Report Prepared By:

Date Signed

Service Center Operations Manager

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Subject	Issue Date	Effective Date	
SUPPLIER INQUIRIES	9/15/85	9/15/85	

PURPOSE These instructions state Corporate policy with regard to supplier inquiries and on site inspections.

POLICY It is the policy of the Corporation to cooperate with its suppliers while at the same time fully protecting the interests of the Company. Supplier inspections are to be pre-authorized in order to minimize disruption of service while providing for the safety of supplier representatives. They should generally be scheduled in advance for a time mutually agreeable to the Company and the supplier.

PROCEDURES

1. Responsibility - Personnel

Supplier inspections are to be authorized in advance by the Vice President of Marketing and conducted by the Service Center Operations Manager.

2. Identification

Obtain the business card of the supplier representative(s) and check other credentials as necessary for all individuals arriving at the service center. Since only pre-authorized inspections are permitted, and these are generally scheduled in advance, credentials for some individuals may be verified through a phone call to the appropriate supplier.

Records must be withheld from examination by unauthorized individuals. If there is any question about the authority of a person to see any records, contact the Company Operations Department or the Corporate Law Department for instructions.

3. Providing Information

The inspection may proceed only after it has been pre-authorized, the identity of the inspector(s) verified by the Service Center Operations Manager and the McKesson Confidentiality Agreement signed (Exhibit 1).

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Subject	Issue Date	Effective Date	
SUPPLIER INQUIRIES	9/15/85	9/15/85	

PROCEDURES
(Cont.)

Only actual questions should be responded to. Information should not be volunteered. If an answer is not known, advise the supplier representative. If documents (i.e., operating logs, inspection records) are examined, only those absolutely necessary and specifically called for are to be presented.

If the supplier representative requires copies of documents, ask them to make this request in writing. Forward any such requests as an attachment to the "Report of Supplier Inspection" (Exhibit 2).

Discussions on pricing or volume should be avoided. Inquiries concerning our prices should be referred to the Vice President of Marketing.

4. Reporting of Inspections

Following an inspection, complete the "Report of Supplier Inspection" (Exhibit 2), and send to the Vice President, Operations, at Home Office, San Francisco. The Operations Department will arrange for redistribution to individuals as indicated on the form.

Copies of documents furnished and any written inquiry or response should be attached to the form. SEND IN THE REPORT AND CONFIDENTIALITY AGREEMENT(S) IMMEDIATELY. Do not delay transmittal while waiting for a follow-up written response or report.

Any post-inspection correspondence or critique received from the Supplier after the "Report of Supplier Inspection" (Exhibit 2) should be promptly forwarded to the Vice President, Operations, at Home Office, San Francisco for redistribution to individuals as indicated on the form.

McKESSON CHEMICAL COMPANY
CONFIDENTIALITY AGREEMENT

McKesson Chemical Company ("McKesson") utilizes certain methods, processes, techniques, equipment, business information, marketing data and customer lists (the "Proprietary Information") in the conduct of its business as a wholesale distributor of industrial chemicals. In the course of your inspection of the McKesson facility you may obtain certain knowledge, information or data concerning the Proprietary Information. Accordingly, in order that McKesson may protect and preserve the confidentiality of the Proprietary Information, you hereby agree, as a condition to conducting the inspection you have requested, as follows:

1. The Proprietary Information relating to the conduct of McKesson's business as a wholesale distributor of industrial chemicals is confidential and proprietary to McKesson.

2. You will protect and preserve the Proprietary Information as secret and confidential, and will instruct any officer, director, employee or agent of your company who receives the Proprietary Information to treat it as such.

3. You will not disclose, divulge, communicate or reveal the Proprietary Information to any third party, or to any of your company's officers, directors, employees or agents unless you reasonably believe that: (i) said persons have a need to review the Proprietary Information for purposes of your business relationship with McKesson; or (ii) you are required by legal process to do so.

4. You will promptly return to us all written Proprietary Information you may have received, and all copies thereof, upon the termination of the business relationship between your company and McKesson.

5. You will remain bound by the provisions of this Confidentiality Agreement for a period of ten (10) years from the date of its execution.

6. In the event you breach, or threaten to breach this Agreement, or any provision thereof, McKesson will suffer irreparable injury to its business, and damages would be impossible to fully ascertain. You therefore agree that upon any threatened, attempted or actual breach of this Agreement, McKesson shall be entitled to injunctive relief, together with such other legal remedies as may be available (including reasonable attorney's fees and costs of suit).

Finally, we agree that the term "Proprietary Information" does not include information which (a) is or becomes generally available to the public, other than as a result of disclosure by your company; (b) was known by you prior to its disclosure to you

by McKesson, provided, however, that this exclusion will not apply to novel combinations of known processes, methods, or equipment not as a whole known to you or to those persons ordinarily skilled in the art; (c) becomes available to you on a non-confidential basis from a source other than McKesson, provided that such source is not bound by a Confidentiality Agreement with McKesson which prohibits disclosure; or (d) is in the public domain. The burden of proving these exceptions to the confidentiality and use provisions of this Agreement rests with you.

If you are in agreement with all of the foregoing, kindly sign and return the enclosed copy which will constitute our agreement concerning the matters addressed.

Very truly yours,

McKESSON CHEMICAL COMPANY

By _____

Agreed to and accepted:

By _____

Dated: _____

TO: H. O. Operations
Regional Operations Manager
Area Operations Manager
Chemical Group Counsel

REPORT OF SUPPLIER INSPECTION

McKESSON FACILITY: _____

Visit Authorized By _____ Date Authorized _____

Send in the report immediately. Attach copies of any documents received or given. Do not delay transmittal if waiting for a follow-up written response. For additional details, use reverse side or attachments.

1. Time and date of contact by representative(s): _____

2. Name(s) and title(s) of representative(s): _____

3. Name of supplier and division, address and phone number at which representative(s) works: _____

4. Purpose of inspection: _____

5. Length of visit: _____

6. What prompted visit: _____

7. What specifically was inspected: _____

8. What records were given or requested: _____

9. Any pictures taken (specify): _____

10. Additional comments: _____

11. Supplier recommendations: _____

Report Prepared by: _____

Date Signed

S.C. Operations Manager

McK00112

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Subject	Issue Date	Effective Date	
RECORDKEEPING REQUIREMENTS (OSHA)	9/15/85	9/15/85	


INTRO-
DUCTION

Exhibit 1 which follows is a booklet containing recordkeeping forms which must be used to record work-related injuries and illnesses. It also contains current information about recordkeeping responsibilities under the Occupational Safety and Health Act of 1970.

EMPLOYEE
ACCESS

Recent OSHA legislation has given employees the legal right to have access to the employer's log of occupational illness and injuries. This should be made available to employees upon request.

Recordkeeping Requirements Under the Occupational Safety and Health Act of 1970



This booklet contains new recordkeeping forms which must be used to record
work related injuries and illnesses which occur on or after January 1, 1978.
It also contains current information about recordkeeping responsibilities
under the Occupational Safety and Health Act of 1970. It replaces a booklet
which was issued in 1975.

U.S. Department of Labor
Occupational Safety and Health Administration
Revised 1978

Recordkeeping Requirements

The Occupational Safety and Health Act of 1970 requires employers to prepare and maintain records of occupational injuries and illnesses. The Bureau of Labor Statistics is responsible for developing and maintaining an effective recordkeeping program. In most States, a statistical agency cooperates with the Bureau in administering the recordkeeping program. Records of injuries and illnesses are necessary for carrying out the purposes of the Act. They are designed to assist compliance safety and health officers in making inspections and investigations. They also provide the basis for a statistical program which produces reliable injury and illness incidence rates and other measures. This information, together with required supplementary records, also will be helpful to employers in identifying many of the factors which cause injuries and illnesses in the workplace.

The following presentation summarizes the OSHA recordkeeping regulations, and should answer most of your questions about OSHA recordkeeping. Further information can be obtained from the State statistical agency or from the Bureau of Labor Statistics Regional Office. See page 4 and back cover for addresses.

Recordkeeping Exemptions

Recordkeeping is not required for the following employers:

Small employers which employed no more than ten (10) full- or part-time employees at any one time during the previous calendar year. A few small employers will have to maintain records if they are selected to participate in the annual survey of occupational injuries and illnesses. They will be notified in advance and supplied with the necessary forms and instructions. Also, State safety and health laws may require small employers to keep injury and illness records. Small employers are not exempt from the requirement to report any accident which results in a fatality or the hospitalization of five (5) or more employees.

Note: If an employer has more than 1 establishment with combined employment of more than 10 employees, records must be kept for all individual establishments.

Employers of domestics in the employer's private residence for the usual purposes of housekeeping or child care, or both.

Employers in religious activities but only with respect to the conduct of religious services or rites. Employees engaged in such services or rites include clergymen, choir members, organists and other musicians, ushers, and the like. NOTE: Records of injuries and illnesses occurring to employees while performing secular activities must be kept. Recordkeeping is also required for employees of private hospitals, schools, orphanages, and commercial establishments owned or operated by religious organizations.

State and Local Government Agencies

In certain States, agencies of State and local governments are required to keep injury and illness records for their employees in accordance with State regulations.

Location of Records

Ordinarily, records must be maintained at each establishment (workplace). See the reverse side of form OSHA No. 200 for a definition of the term establishment. If an employer has more than one establishment, a different set of records must be maintained at each one.

Some firms, such as those engaged in agriculture, construction, transportation, and the like, have activities which are physically dispersed. Records of injuries and illnesses to employees engaged in such activities may be maintained at the place where employees report each day. If such employees do not regularly report to the same place, records may be maintained at a central place for each group of employees regularly supervised by the same person. If records are maintained centrally, two conditions must be met. One, the address and telephone number of the place where the records are kept must be available at the worksite; and two, there must be personnel available at the central place during normal business hours to provide information from the records.

Some employees, such as traveling salesmen and technicians, do not report to a single establishment and are not generally supervised in their daily work. Records for such employees shall be maintained either at the place from which they operate or at the place from which they are paid.

Preparation and Maintenance of Records

OSHA recordkeeping is not complicated. Only two forms must be maintained. A copy of each is found in this booklet.

The Log and Summary [OSHA No. 200]

The log is a convenient means for classifying injury and illness cases and for noting the extent of and outcome of each. Not every injury or illness occurring in the workplace is recordable. Definitions on the back of the OSHA No. 200 will explain how to determine which cases must be recorded. The back of the form also contains information on posting requirements for this form.

Although other records must be maintained at the establishment to which they refer, it is possible to prepare and maintain the log at another location, using data processing equipment if desired. If the log is prepared elsewhere, a copy updated to within 45 calendar days must be present at all times in the establishment.

The Supplementary Record [OSHA No. 101]

For every recordable injury or illness, it is necessary to record additional information requested on the OSHA No. 101 form. However, the OSHA No. 101 form itself does not have to be used. Worker's compensation, insurance or other reports are acceptable supplementary records if they contain all items found on the OSHA No. 101 form. If they do not, the missing items must be added somewhere on the same form or on a separate attachment.

Supplementary records must be completed and present in the establishment within six (6) workdays after the employer has been notified of an injury or illness case.

Supplementary Record of Occupational Injuries and Illnesses

EMPLOYER

1. Name _____
2. Mail address _____
(No. and street) (City or town) (State)
3. Location, if different from mail address _____

INJURED OR ILL EMPLOYEE

4. Name _____ Social Security No. _____
(First name) (Middle name) (Last name)
5. Home address _____
(No. and street) (City or town) (State)
6. Age _____ 7. Sex: Male _____ Female _____ (Check one)
8. Occupation _____
(Enter regular job title, not the specific activity he was performing at time of injury.)
9. Department _____
(Enter name of department or division in which the injured person is regularly employed, even though he may have been temporarily working in another department at the time of injury.)

THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL ILLNESS

10. Place of accident or exposure _____
(No. and street) (City or town) (State)
If accident or exposure occurred on employer's premises, give address of plant or establishment in which it occurred. Do not indicate department or division within the plant or establishment. If accident occurred outside employer's premises at an identifiable address, give that address. If it occurred on a public highway or at any other place which cannot be identified by number and street, please provide place references locating the place of injury as accurately as possible.
11. Was place of accident or exposure on employer's premises? _____ (Yes or No)
12. What was the employee doing when injured? _____
(Be specific. If he was using tools or equipment or handling material, name them and tell what he was doing with them.)
13. How did the accident occur? _____
(Describe fully the events which resulted in the injury or occupational illness. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use separate sheet for additional space.)

OCCUPATIONAL INJURY OR OCCUPATIONAL ILLNESS

14. Describe the injury or illness in detail and indicate the part of body affected. _____
(e.g.: amputation of right index finger at second joint; fracture of ribs; lead poisoning; dermatitis of left hand, etc.)
15. Name the object or substance which directly injured the employee. (For example, the machine or thing he struck against or which struck him; the vapor or poison he inhaled or swallowed; the chemical or radiation which irritated his skin; or in cases of strains, hernias, etc., the thing he was lifting, pulling, etc.) _____
16. Date of injury or initial diagnosis of occupational illness _____ (Date)
17. Did employee die? _____ (Yes or No)

OTHER

18. Name and address of physician _____
19. If hospitalized, name and address of hospital _____
Date of report _____ Prepared by _____
Official position _____

SUPPLEMENTARY RECORD OF OCCUPATIONAL INJURIES AND ILLNESSES

To supplement the Log and Summary of Occupational Injuries and Illnesses (OSHA No. 200), each establishment must maintain a record of each recordable occupational injury or illness. Worker's compensation, insurance, or other reports are acceptable as records if they contain all facts listed below or are supplemented to do so. If no suitable report is made for other purposes, this form (OSHA No. 101) may be used or the necessary facts can be listed on a separate plain sheet of paper. These records must also be available in the establishment without delay and at reasonable times for examination by representatives of the Department of Labor and the Department of Health, Education and Welfare, and States accorded jurisdiction under the Act. The records must be maintained for a period of not less than five years following the end of the calendar year to which they relate.

Such records must contain at least the following facts:

- 1) *About the employer*—name, mail address, and location if different from mail address.
- 2) *About the injured or ill employee*—name, social security number, home address, age, sex, occupation, and department.
- 3) *About the accident or exposure to occupational illness*—place of accident or exposure, whether it was on employer's premises, what the employee was doing when injured, and how the accident occurred.
- 4) *About the occupational injury or illness*—description of the injury or illness, including part of body affected; name of the object or substance which directly injured the employee; and date of injury or diagnosis of illness.
- 5) *Other*—name and address of physician; if hospitalized, name and address of hospital; date of report; and name and position of person preparing the report.

SEE DEFINITIONS ON THE BACK OF OSHA FORM 200.

columns 1 and 13 — INJURIES OR ILLNESSES WITHOUT LOST WORKDAYS. Self-explanatory.

columns 7a through 7g — TYPE OF ILLNESS.

Enter a check in only *one* column for each illness.

TERMINATION OR PERMANENT TRANSFER—Place an asterisk to the right of the entry in columns 7a through 7g (type of illness) which represented a termination of employment or permanent transfer.

Totals

Add number of entries in columns 1 and 8.

Add number of checks in columns 2, 3, 6, 7, 9, 10, and 12.

Add number of days in columns 4, 5, 11, and 12.

Totals are to be generated for each column at the end of each page and at the end of each year. *Only* the yearly totals are required for posting.

If an employee's loss of workdays is continuing at the time the totals are summarized, estimate the number of future workdays the employee will lose and add that estimate to the workdays already lost and include this figure in the annual totals. No further entries are to be made with respect to such cases in the next year's log.

Definitions

OCCUPATIONAL INJURY is any injury, such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from an exposure involving a single incident in the work environment.

NOTE: Conditions resulting from animal bites, such as insect or snake bites or from one-time exposure to chemicals, are considered to be injuries.

OCCUPATIONAL ILLNESS of an employee is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

The following listing gives the categories of occupational illnesses and disorders that will be utilized for the purpose of classifying recordable illnesses. For purposes of information, examples of each category are given. These are typical examples, however, and are not to be considered the complete listing of the types of illnesses and disorders that are to be counted under each category.

7a. Occupational Skin Diseases or Disorders

Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; chrome ulcers; chemical burns or inflammations; etc.

7b. Dust Diseases of the Lungs (Pneumoconioses)

Examples: Silicosis, asbestosis, coal worker's pneumoconiosis, byssinosis, siderosis, and other pneumoconioses.

7c. Respiratory Conditions Due to Toxic Agents

Examples: Pneumonitis, pharyngitis, rhinitis or acute congestion due to chemicals, dusts, gases, or fumes; farmer's lung; etc.

7d. Poisoning (Systemic Effect of Toxic Materials)

Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion, lead arsenate; poisoning by other chemicals such as formaldehyde, plastics, and resins; etc.

7e. Disorders Due to Physical Agents (Other than Toxic Materials)

Examples: Heatstroke, sunstroke, heat exhaustion, and other effects of environmental heat; freezing, frostbite, and effects of exposure to low temperatures; caisson disease; effects of ionizing radiation (isotopes, X-rays, radium); effects of nonionizing radiation (welding flash, ultraviolet rays, microwaves, sunburn); etc.

7f. Disorders Associated With Repeated Trauma

Examples: Noise-induced hearing loss; synovitis, tenosynovitis, and bursitis; Raynaud's phenomena; and other conditions due to repeated motion, vibration, or pressure.

7g. All Other Occupational Illnesses

Examples: Anthrax, brucellosis, infectious hepatitis, malignant and benign tumors, food poisoning, histoplasmosis, coccidioidomycosis, etc.

MEDICAL TREATMENT includes treatment (other than first aid) administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does **NOT** include first-aid treatment (one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care) even though provided by a physician or registered professional personnel.

ESTABLISHMENT: A single physical location where business is conducted or where services or industrial operations are performed (for example: a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office). Where distinctly separate activities are performed at a single physical location, such as construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment.

For firms engaged in activities which may be physically dispersed, such as agriculture; construction; transportation; communications; and electric, gas, and sanitary services, records may be maintained at a place to which employees report each day.

Records for personnel who do not primarily report or work at a single establishment, such as traveling salesmen, technicians, engineers, etc., shall be maintained at the location from which they are paid or the base from which personnel operate to carry out their activities.

WORK ENVIRONMENT is comprised of the physical location, equipment, materials processed or used, and the kinds of operations performed in the course of an employee's work, whether on or off the employer's premises.

Bureau of Labor Statistics
 Log and Summary of Occupational
 Injuries and Illnesses

U.S.

NOTE: This form is required by Public Law 91-596 and must be kept in the establishment for 5 years. Failure to maintain and post can result in the issuance of citations and assessment of penalties. (See posting requirements on the other side of form.)

RECORDABLE CASES: You are required to record information about every occupational death, every nonfatal occupational illness, and those nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid). (See definitions on the other side of form.)

Company Name
 Establishment Name
 Establishment Address

Enter or duplicate number which facilitates comparisons with supplementary records.	Date of Injury or Onset of Illness Enter Mo./day.	Employee's Name Enter first name or initial, middle initial, last name.	Occupation Enter regular job title, not activity employee was performing when injured or at onset of illness. In the absence of a formal title, enter a brief description of the employee's duties.	Department Enter department in which the employee is regularly employed or a description of normal workplace to which employee is assigned, even though temporarily working in another department at the time of injury or illness.	Description of Injury or Illness Enter a brief description of the injury or illness and indicate the part or parts of body affected. Typical entries for this column might be: Amputation of 1st joint right forefinger; Strain of lower back; Contact dermatitis on both hands; Electrocuting—body.	Extent of and Outcomes	
						Fatalities Injury-Related Enter DATE of death. Mo./day, yr.	Non-Fatal Injury-Related Enter DATE of injury. Days from work days restr. work active or bc.
	(B)	(C)	(D)	(E)	(F)	(1)	(2)
PREVIOUS PAGE TOTALS →							
TOTALS (Instructions on other side of form.) →							

Instructions for OSHA No. 200

Log and Summary of Occupational Injuries and Illnesses

Each employer who is subject to the recordkeeping requirements of the Occupational Safety and Health Act of 1970 must maintain for each establishment a log of all recordable occupational injuries and illnesses. This form (OSHA No. 200) may be used for that purpose. A substitute for the OSHA No. 200 is acceptable if it is as detailed, easily readable, and understandable as the OSHA No. 200.

Enter each recordable case on the log within six (6) workdays after learning of its occurrence. Although other records must be maintained at the establishment to which they refer, it is possible to prepare and maintain the log at another location, using data processing equipment if desired. If the log is prepared elsewhere, a copy updated to within 45 calendar days must be present at all times in the establishment.

Logs must be maintained and retained for five (5) years following the end of the calendar year to which they relate. Logs must be available (normally at the establishment) for inspection and copying by representatives of the Department of Labor, or the Department of Health, Education and Welfare, or States accorded jurisdiction under the Act.

Changes in Extent of or Outcome of Injury or Illness

If, during the 5-year period the log must be retained, there is a change in an extent and outcome of an injury or illness which affects entries in columns 1, 2, 6, 8, 9, or 13, the first entry should be lined out and a new entry made. For example, if an injured employee at first required only medical treatment but later lost workdays away from work, the check in column 6 should be lined out, and checks entered in columns 2 and 3 and a number of lost workdays entered in column 4.

In another example, if an employee with an occupational illness lost workdays, returned to work, and then died of the illness, the entries in columns 9 and 10 should be lined out and the date of death entered in column 8.

The entire entry for an injury or illness should be lined out if later found to be nonrecordable. For example: an injury or illness which is later determined not to be work related, or which was initially thought to involve medical treatment but later was determined to have involved only first aid.

1. Posting Requirements

A copy of the totals and information following the fold line of the last page for the year must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than **February 1 and must remain in place until March 1.**

Even though there were no injuries or illnesses during the year, zeros must be entered on the totals line, and the form posted.

The person responsible for the **annual summary totals** shall certify that the totals are true and complete by signing at the bottom of the form.

2. Instructions for Completing Log and Summary of Occupational Injuries and Illnesses

Column A — CASE OR FILE NUMBER. Self-explanatory.

Column B — DATE OF INJURY OR ONSET OF ILLNESS.

For occupational injuries, enter the date of the work accident which resulted in injury. For occupational illnesses, enter the date of initial diagnosis of illness, or, if absence from work occurred before diagnosis, enter the first day of the absence attributable to the illness which was later diagnosed or recognized.

Columns

C through F — Self-explanatory.

Columns

1 and 8 — INJURY OR ILLNESS-RELATED DEATHS.
Self-explanatory.

Columns

2 and 9 — INJURIES OR ILLNESSES WITH LOST WORKDAYS.
Self-explanatory.

Any injury which involves days away from work, or days of restricted work activity, or both must be recorded since it always involves one or more of the criteria for recordability.

Columns

3 and 10 — INJURIES OR ILLNESSES INVOLVING DAYS AWAY FROM WORK. Self-explanatory.

Columns

4 and 11 — LOST WORKDAYS—DAYS AWAY FROM WORK.

Enter the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness. The number of workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

NOTE: For employees not having a regularly scheduled shift, such as certain truck drivers, construction workers, farm labor, casual labor, part-time employees, etc., it may be necessary to estimate the number of lost workdays. Estimates of lost workdays shall be based on prior work history of the employee AND days worked by employees, not ill or injured, working in the department and/or occupation of the ill or injured employee.

Columns

5 and 12 — LOST WORKDAYS—DAYS OF RESTRICTED WORK ACTIVITY.

Enter the number of workdays (consecutive or not) on which because of injury or illness:

- (1) the employee was assigned to another job on a temporary basis, or
- (2) the employee worked at a permanent job less than full time, or
- (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

OSHA Field Locations

(Includes addresses and telephone numbers for OSHA Regional Offices and cities in which other offices are located. Complete information on field locations may be obtained from any OSHA Regional Office.)

Region 1: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

JFK Federal Building
Room 1804 - Government Center
Boston, Massachusetts 02203
Phone: 617-223-6712

Area offices:

Hartford, Connecticut
Springfield, Massachusetts
Waltham, Massachusetts
Concord, New Hampshire

District office:

Providence, Rhode Island

Region 2: New York, New Jersey, Puerto Rico, Virgin Islands, Canal Zone

1515 Broadway - Room 3445
New York, New York 10036
Phone: 212-399-5754

Area offices:

Jersey Beach, New Jersey
Camden, New Jersey
Cape May, New Jersey
Haddonfield, New Jersey
Newark, New Jersey
Albany, New York
Brooklyn, New York
Buffalo, New York
Flushing, New York
New York, New York
Rochester, New York
Syracuse, New York
Westbury, New York
White Plains, New York
Hato Rey, Puerto Rico

Region 3: Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia

Gateway Building - Suite 2100
3535 Market Street
Philadelphia, Pennsylvania 19104
Phone: 215-596-1201

Area offices:

Washington, D.C.
Baltimore, Maryland
Harrisburg, Pennsylvania
Philadelphia, Pennsylvania
Pittsburgh, Pennsylvania
Wilkes Barre, Pennsylvania
Richmond, Virginia
Charleston, West Virginia

District offices:

Wilmington, Delaware
Norfolk, Virginia

Field stations:

Allentown, Pennsylvania
Johnstown, Pennsylvania
Lancaster, Pennsylvania
Meadville, Pennsylvania
State College, Pennsylvania
Falls Church, Virginia
Roanoke, Virginia
Elkins, West Virginia
Wheeling, West Virginia

Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

1375 Peachtree Street, NE - Suite 567
Atlanta, Georgia 30309
Phone: 404-521-3573

Area offices:

Birmingham, Alabama
Mobile, Alabama
Fort Lauderdale, Florida
Jacksonville, Florida
Tampa, Florida
Macon, Georgia
Savannah, Georgia
Tucker, Georgia
Louisville, Kentucky
Jackson, Mississippi
Raleigh, North Carolina
Columbia, South Carolina
Nashville, Tennessee

Field stations:

Anniston, Alabama
Huntsville, Alabama
Montgomery, Alabama
Sheffield, Alabama
Pensacola, Florida
Tallahassee, Florida
Gulfport, Mississippi
Charleston, South Carolina

Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

230 South Dearborn Street - Room 3263
Chicago, Illinois 60604
Phone: 312-353-2220

Area offices:

Calumet City, Illinois
Niles, Illinois
North Aurora, Illinois
Peoria, Illinois
Indianapolis, Indiana
Detroit, Michigan
Minneapolis, Minnesota
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Toledo, Ohio
Appleton, Wisconsin
Milwaukee, Wisconsin

District offices:

Bellefonte, Illinois
Eau Claire, Wisconsin
Madison, Wisconsin

Region 6: Arkansas, Louisiana, New Mexico, Oklahoma, Texas

555 Griffin Square Building - Room 602
Dallas, Texas 75202
Phone: 214-749-2477/3651

Area offices:

Little Rock, Arkansas
Baton Rouge, Louisiana
New Orleans, Louisiana
Albuquerque, New Mexico
Oklahoma City, Oklahoma
Tulsa, Oklahoma
Austin, Texas
Dallas, Texas
Hartington, Texas
Houston, Texas
Irving, Texas
Lubbock, Texas
San Antonio, Texas
Tyler, Texas

District office:

Corpus Christi, Texas

Field stations:

Shreveport, Louisiana
Beaumont, Texas
El Paso, Texas

Region 7: Iowa, Kansas, Missouri, Nebraska

911 Walnut Street - Room 3000
Kansas City, Missouri 64106
Phone: 816-374-5661

Area offices:

Des Moines, Iowa
Wichita, Kansas
Kansas City, Missouri
St. Louis, Missouri
North Platte, Nebraska
Omaha, Nebraska

Region 8: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

1961 Scout Street - Room 15010
Denver, Colorado 80294
Phone: 303-837-3833

Area offices:

Lakewood, Colorado
Billings, Montana
Bismarck, North Dakota
Sioux Falls, South Dakota
Salt Lake City, Utah

Region 9: Arizona, California, Hawaii, Nevada, Guam, American Samoa, Trust Territory of the Pacific Islands

400 Golden Gate Avenue - Room 947
Post Office Box 36017
San Francisco, California 94102
Phone: 415-556-0586

Area offices:

Phoenix, Arizona
Long Beach, California
San Francisco, California
Honolulu, Hawaii

Field stations:

Tucson, Arizona
Fresno, California
Sacramento, California
Las Vegas, Nevada

Region 10: Alaska, Idaho, Oregon, Washington

Federal Building - Room 227
909 First Avenue
Seattle, Washington 98174
Phone: 206-442-5930

Area offices:

Anchorage, Alaska
Boise, Idaho
Portland, Oregon
Bellevue, Washington

Field stations:

Coeur D'Alene, Idaho
Leviston, Idaho
Pocatello, Idaho

Participating State Statistical Agencies

- Alabama Department of Labor
600 Administrative Building
Montgomery, Alabama 36130
Phone: 205-832-6270
- * Alaska Department of Labor
Research and Analysis Section
Post Office Box 3-7000
Juneau, Alaska 99802
Phone: 907-465-4500
- American Samoa Department of
Manpower Resources
Pago Pago, American Samoa 96799
Phone: 633-6485
- * Arizona Industrial Commission
Post Office Box 19070
Phoenix, Arizona 85015
Phone: 602-271-5559
- Arkansas Department of Labor
OSH Statistics - Room 407
1515 West Seventh Street
Little Rock, Arkansas 72202
Phone: 501-371-2770
- * California Department of
Industrial Relations
Labor Statistics and Research
Post Office Box 603
San Francisco, California 94904
Phone: 415-557-3117
- * Colorado Department of Labor and
Employment
Division of Labor
1313 Sherman
Denver, Colorado 80203
Phone: 303-839-3748
- * Connecticut Department of Labor
200 Folly Brook Boulevard
Wethersfield, Connecticut 06109
Phone: 203-566-4370
- District of Columbia Minimum Wage
and Industrial Safety Board
Industrial Safety Division
2900 Newton Street, N.E. - 1st Flr.
Washington, D.C. 20018
Phone: 202-832-1572
- Delaware Department of Labor
Division of Industrial Affairs
613 No. Union Street
Wilmington, Delaware 19805
Phone: 302-571-2879
- Florida Department of Commerce
Division of Labor - Room 206
1321 Executive Center Drive, East
Tallahassee, Florida 32301
Phone: 904-488-5837
- Guam Department of Labor
Post Office Box 2950
Agaña, Guam 96910
Phone: 477-9820-9
- * Hawaii Department of Labor
and Industrial Relations
225 Mililani Street
Honolulu, Hawaii 96813
Phone: 808-548-6396
- Idaho Industrial Commission
317 Main Street
Boise, Idaho 83702
Phone: 208-384-2193
- * Indiana Division of Labor
Department of Statistics, IOSHA
100 No. Senate Avenue - Room 1013
Indianapolis, Indiana 46204
Phone: 317-633-4473
- * Iowa Bureau of Labor
East Seventh and Walnut
Des Moines, Iowa 50319
Phone: 515-281-3606
- Kansas Department of Health and
Environment
Forbes Air Force Base - Bldg. 740
Topeka, Kansas 66620
Phone: 913-862-9366
- * Kentucky Department of Labor
Research and Statistics Division
151 Elkhorn Court
Frankfort, Kentucky 40601
Phone: 502-564-3100
- Louisiana Department of Employment
Security, Research and Statistics-OSH
1001 North 33rd and Piqua
Baton Rouge, Louisiana 70804
Phone: 504-389-5647
- Maine Department of Manpower Affairs
Division of Research Statistics
State Office Building - 2nd Flr.
Augusta, Maine 04333
Phone: 207-289-3331
- * Maryland Department of Licensing
and Regulation
Division of Labor and Industry
203 E. Baltimore Street
Baltimore, Maryland 21202
Phone: 301-383-2264
- Massachusetts Department of Labor
and Industries
Division of Statistics
100 Cambridge Street
Boston, Massachusetts 02202
Phone: 617-727-3596
- * Michigan Department of Labor
Injury Analysis Division
7150 Harris Drive
Lansing, Michigan 48926
Phone: 517-373-9650
- * Minnesota Department of Labor and
Industry
444 Lafayette Road
Saint Paul, Minnesota 55101
Phone: 612-296-3947
- Mississippi State Board of Health
Occupational Safety and Health
2628 Southerland Street
Jackson, Mississippi 39216
Phone: 601-982-6315
- Missouri Division of Worker's
Compensation
Post Office Box 58
Jefferson City, Missouri 65101
Phone: 314-751-4231
- Montana Department of Labor and
Industry
Worker's Compensation Division
815 Front Street
Helena, Montana 59601
Phone: 406-449-2994
- Nebraska Worker's Compensation Court
Post Office Box 94845
Lincoln, Nebraska 68509
Phone: 402-471-2568
- * Nevada Industrial Commission
515 E. Musser Street
Carson City, Nevada 89714
Phone: 702-885-5240
- New Jersey Department of Labor
and Industry
Division of Planning and Research
Post Office Box 359
Trenton, New Jersey 08625
Phone: 609-292-2643
- * New Mexico Health and Social
Services Department - EIA
Post Office Box 2348
Santa Fe, New Mexico 87503
Phone: 505-827-5271
- New York Department of Labor
Division of Research and Statistics
2 World Trade Center
New York, New York 10047
Phone: 518-457-2727
- * North Carolina Department of Labor
Division of Statistics
4 West Edenton Street
Raleigh, North Carolina 27601
Phone: 919-733-4940
- Ohio Department of Industrial
Relations
2323 West 5th Avenue
Post Office Box 825
Columbus, Ohio 43216
Phone: 614-466-7520
- * Oregon Worker's Compensation
Board
OSH/BLS Statistics Section
Labor and Industries Building
Room 108
Salem, Oregon 97310
Phone: 503-378-8254
- Pennsylvania Department of Labor
and Industry
OSH Statistics
7th and Forster Streets
Harrisburg, Pennsylvania 17120
Phone: 717-787-1918
- * Puerto Rico Department of Labor
Bureau of Labor Statistics
414 Barbosa Avenue
Hato Rey, Puerto Rico 00917
Phone: 809-765-1970
- Rhode Island Department of Labor
Division of Statistics
235 Promenade Street
Providence, Rhode Island 02908
Phone: 401-277-2731
- * South Carolina Department of Labor
Division of Research and Statistics
Post Office Drawer 11329
Columbia, South Carolina 29211
Phone: 803-756-8507
- South Dakota Department of Health
Division of Public Health Statistics
Poss Building
Pierre, South Dakota 57501
Phone: 605-224-3355
- * Tennessee Department of Labor
Division of Research and Statistics
501 Union Building
Suite F, 2nd Floor
Nashville, Tennessee 37219
Phone: 615-741-1748
- Texas Department of Health
Division of Occupational Safety
1100 West 49th Street
Austin, Texas 78756
Phone: 512-454-3721
- * Utah Industrial Commission
OSH Statistical Division
448 South 4th East
Salt Lake City, Utah 84111
Phone: 801-533-6401
- * Vermont Department of Labor and
Industry
State Office Building
Montpelier, Vermont 05602
Phone: 802-828-2286
- * Virgin Islands Department of Labor
Post Office Box 146
St. Thomas, Virgin Islands 00801
Phone: 809-774-3650
- * Virginia Department of Labor and
Industry
Post Office Box 12064
Fifth Street Office Building
Richmond, Virginia 23241
Phone: 804-786-2384
- * Washington Department of Labor
and Industries
Industrial Safety and Health
Post Office Box 25d9
Olympia, Washington 98504
Phone: 206-753-9500
- West Virginia Department of Labor
1900 Washington Street, East
Charleston, West Virginia 25305
Phone: 304-348-7890
- Wisconsin Department of Industry,
Labor and Human Relations
201 E. Washington Avenue
Madison, Wisconsin 53707
Phone: 608-266-7559
- * Wyoming Department of Labor and
Statistics
Division of Research and Statistics
Barrett Building, 4th Floor
Cheyenne, Wyoming 82002
Phone: 307-777-7261

* As of January 1, 1978, a State safety and health plan under section 16(b) of the Act was in operation. This agency may be contacted directly for specific information regarding regulations in the State.

Retention of Records

All records must remain in the establishment for five (5) years after the year to which they relate. If an establishment changes ownership, the new employer must preserve the records for the remainder of the five-year period. He is not responsible, however, for updating records of the former owner.

Poster

Each employer must display in each establishment a poster which explains the protections and obligations of employees under the Occupational Safety and Health Act. States which have approved plans will require that a State poster be displayed. For further information about such requirements, consult any of the OSHA offices or the State statistical agencies (addresses and telephone numbers appear on pages 3 and 4). The order form which appears on the inside back cover of this booklet may be used to order posters. Employers using the form will be supplied with all necessary posters, including State posters, when they must be used in addition to the Federal poster.

Reporting of Fatality or Multiple Hospitalization Accidents

An employer must report any accident which results in one (1) or more deaths or in hospitalization of five (5) or more employees. The report must be made within 48 hours after the accident and can be made orally or in writing. It must be made to the Area Director of the Occupational Safety and Health Administration, except for States with approved State plans. In States which have approved plans, the report shall be made to the State agency which has enforcement responsibilities under the plan. Further information may be obtained from the OSHA Regional Offices (see addresses and telephone numbers on page 3).

Access to Records

Records can be inspected and copied at any reasonable time by authorized Federal or State government representatives. As of the time of printing this booklet, OSHA is considering a provision for affording employee access to the Log and Summary of Occupational Injuries and Illnesses (OSHA No. 200). If this provision is adopted by OSHA, employers shall comply with its terms in making the log available to employees and their representatives at reasonable times.

Periodic Reports of Injuries and Illnesses

If an establishment is selected to participate in a survey of occupational injuries and illnesses, it will be mailed a report form at the proper time.

Where to Obtain OSHA Recordkeeping Forms

Recordkeeping forms will not be automatically mailed to employers each year. To request additional forms, use the order blank on the inside back cover of this booklet.

Recordkeeping Under Worker's Compensation and OSHA

OSHA recordkeeping and reporting requirements differ from those established under the various State worker's compensation laws. Because they differ, employers must not substitute worker's compensation criteria in determining whether or not a case should be recorded for OSHA. Worker's compensation rules may require employers to record more or fewer cases than the OSHA rules. For example, worker's compensation laws in some States require an injury to be reported only if it results in at least two (2) lost workdays. In other States, any injury which requires a visit to a doctor must be recorded, regardless of its severity. These examples differ from the OSHA definition of a recordable case. Employers which are using State first report forms as a substitute for the supplementary record (OSHA No. 101) must prepare a form for each OSHA recordable case whether or not the State worker's compensation law requires that a report be prepared.

Order Form

Booklets and forms can be obtained by completing the order form below and mailing it to the appropriate State statistical agency (if there is one in your state) or to the nearest Regional Office of the Bureau of Labor Statistics.

ADDRESS LABEL
Type or Print

FROM: Name _____
Firm _____
Street Address _____
City, State, Zip _____

Please send me the following items at no charge:

_____ Recordkeeping Booklets
_____ Log and Summary of Occupational Injuries and Illnesses (OSHA No. 200)
_____ Supplementary Record of Occupational Injuries and Illnesses (OSHA No. 101)
_____ Poster: Job Safety and Health Protection

U.S. Department of Labor
Bureau of Labor Statistics
Washington, D.C. 20212
Official Business
Penalty for private use, \$300

Postage and Fees Paid
U.S. Department of Labor
First Class Mail



Lab-441

United States Department of Labor Bureau of Labor Statistics-Regional Offices

Region 1-Boston
1603-A Federal Office Building
Boston, Massachusetts 02203
Phone: 617-223-4533
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Region 2-New York
1515 Broadway
New York, New York 10036
Phone: 212-662-5245
New Jersey
New York
Puerto Rico
Virgin Islands

Region 3-Philadelphia
Post Office Box 13309
Philadelphia, Pennsylvania 19101
Phone: 215-596-1162
Delaware
District of Columbia
Maryland
Pennsylvania
Virginia
West Virginia

Region 4-Atlanta
1371 Peachtree Street, N.E.
Atlanta, Georgia 30309
Phone: 404-881-3660
Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee

Region 5-Chicago
Post Office Box 2145
Chicago, Illinois 60690
Attn: OSHA Forms
Phone: 312-353-1880
Illinois
Indiana
Michigan
Minnesota
Ohio
Wisconsin

Region 6-Dallas
555 Griffin Square Building
2nd Floor
Dallas, Texas 75202
Phone: 214-749-1781
Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Regions 7 and 8-Kansas City
and Denver
Federal Office Building
911 Walnut Street
Kansas City, Missouri 64106
Phone: 816-374-3685
Colorado
Iowa
Kansas
Missouri
Montana
Nebraska
North Dakota
South Dakota
Utah
Wyoming

Regions 9 and 10-San Francisco
and Seattle
450 Golden Gate Avenue
Box 36017
San Francisco, California 94102
Phone: 415-556-8980
Alaska
Arizona
California
Hawaii
Idaho
Nevada
Oregon
Washington

Employers: This booklet contains information about important responsibilities under the Occupational Safety and Health Act of 1970. It also contains forms needed to prepare required occupational injury and illness records.

McK00125

Section	Reference	Page	End
GENERAL SAFETY	10.60	1	
Subject	Issue Date	Effective Date	
GENERAL INDUSTRIAL SAFETY ORDERS (CAL/OSHA)	9/15/85	9/15/85	

INTRO-
DUCTION

Although the following are extracted from CAL/OSHA (the California program which pre-empts OSHA), they are included in this manual because they are similar to OSHA standards and are basic to any good safety program. They should be used as guidelines in all safety operations at McKesson Chemical locations.

ACCIDENT
PREVENTION
PROGRAM

On March 23, 1977, the Occupational Safety and Health Standards Board adopted a LANDMARK standard, General Industry Standard 3203. It reads as follows:

3203. Accident Prevention Program

(a) Every employer shall inaugurate and maintain an accident prevention program which shall include, but not be limited to, the following:

1. A training program designed to instruct employees in general safe work practices plus specific instruction, with regard to hazards unique to any job assignment.
2. Scheduled periodic inspections to identify and correct any unsafe conditions and work practices which may be found.

"instruct employees in general safe work practices"

is interpreted to mean work practices that are generally applicable to most employees throughout the worksite.

Examples of General Safe Work Practices might include:

- lifting procedures
- use of proper personal protective equipment
- knowledge of exits
- medical and first-aid procedures
- housekeeping practices
- use of fire extinguishers
- evacuation plans
- storage and handling of flammables

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.60	2	
Subject	Issue Date	Effective Date	
GENERAL INDUSTRIAL SAFETY ORDERS (CAL/OSHA)	9/15/85	9/15/85	

ACCIDENT
PREVENTION
PROGRAM
(Cont.)

"specific instruction with regard to hazards unique to any job assignment"

is interpreted to mean training on the hazards and safe work practices specific to an individual employee's work assignment.

IMPLEMEN-
TATION

Effective implementation of a total accident prevention program involves the following seven basic elements:

1. Management leadership. The top authority must:
 - a. Assume responsibility for the prevention of accidents and illnesses.
 - b. Support a written safety and health policy.
 - c. Publicize and identify itself with the stated safety and health policy.
 - d. Demonstrate support of the safety and health program by active participation and cooperation.
2. Assignment of Responsibility. The authority must make it clearly understood that:
 - a. Accident and Illness Prevention is an assigned responsibility for all employees at every level, equal to any other work responsibility.
 - b. All supervisors will be accountable to top management for injuries or illnesses to their subordinates.
 - c. The prevention of accidents and illnesses is a line responsibility.

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.60	3	
Subject	Issue Date	Effective Date	
GENERAL INDUSTRIAL SAFETY ORDERS (CAL/OSHA)	9/15/85	9/15/85	

IMPLEMEN-
TATION
(Cont.)

3. Maintenance of Safe and Healthful Working Conditions. Management must:
 - a. Establish a system of periodic inspection of work areas to identify and correct any unsafe conditions and work practices which may be found. This is most effectively done with safety committees that have employee participation.
 - b. Establish effective training programs (See #4a. & b.)
 - c. Establish a system of procurement and use of personal protective equipment.
 - d. Establish standards of housekeeping and work conditions in each section and review of periodic reports on conditions by management.
4. Safety Education Program. Management must insist on:
 - a. A training program designed to instruct employees in general safe work practices.
 - b. A training program designed to instruct employees in specific instruction with regard to hazards unique to any job assignment.
 - c. Establishment of safety and health training for supervisors in conjunction with other management training programs.
 - d. Instruction for supervisors on the "how" of accident and illness prevention by use of training films, seminars and private consultants (budget permitting).
 - e. Instruction for supervisors on minimum safety and health requirements for proper work methods and equipment.

MKIL40278

MK094680

MKIL189279
McK00128

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.60	4	
Subject	Issue Date	Effective Date	
GENERAL INDUSTRIAL SAFETY ORDERS (CAL/OSHA)	9/15/85	9/15/85	

IMPLEMEN-
TATION
(Cont.)

5. Accident Reporting System and Evaluation.

- a. Document periodic inspections and corrective measures taken.
- b. Document training activities, length of instruction, how often instruction is given, and employee use of instruction.
- c. Accident reports completed by supervisors and forwarded to superiors with recommendation for prevention of recurrence.
- d. Periodic reports and analyses of accident and illness experiences reviewed by management to determine accident trends; areas where there should be additional emphasis on safety; the effectiveness of the program; and whether to establish or revise goals.

6. Medical Services and First Aid (GISO 3400).

- a. Post emergency information. The phone numbers of the closest ambulance service, fire/rescue unit, police station, and hospital should be posted by telephones. The amount of time it takes to look up one of these important numbers can make a big difference to a seriously injured person.
- b. Provide adequate first aid equipment and supplies. First aid equipment and supplies, including a variety of dressings and instruments, as well as an up-to-date first aid manual, should be stored where they can be reached quickly and easily in case of an accident. Larger workplaces may need more than one fully equipped first aid chest.

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IMPLEMEN-
TATION
(Cont.)

7. Acceptance of Personal Responsibility by All Employees. Management must obtain employee support by means of:
 - a. Instruction and training in safe and healthful job procedures and practices.
 - b. Continuing practices of making employees aware of safety and health program through posters, bulletins and discussions with supervisors.
 - c. Continuing awareness of management's support of the safety and health program.

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GENERAL

An important aspect to our relationship with suppliers is their capability to lend us assistance in various ways. Suppliers normally have resources, expertise, and an interest in seeing that their products are handled safely and properly. Understanding that this valuable assistance is available to us to improve our operations and support sales efforts, we can greatly extend our capabilities in these areas by using supplier:

1. Assistance

Besides regular sales assistance with our customers, suppliers can normally furnish such items as:

- MSDS -- Material Safety Data Sheets
- Technical Bulletins
- Handling Data, Wall Charts, etc.
- Formulations & User Information

2. Technical Resources

Adding to our technical strengths, suppliers can assist us in such areas as:

- Mechanical/handling experience
- Materials of construction for tanks, lines, etc.
- Container recommendations
- Blending, diluting advice
- Testing, quality control

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GENERAL
(Cont.)

3. Safety & Emergency Response

Various special programs are in effect to lend assistance in safety matters and respond to chemical emergencies -- for example:

- DuPont Rhythm -- guides in transportation emergency response, training, and literature.
- Chlorine Institute/CHLOREP -- chlorine emergency help from chlorine producers and repackagers by zones; also with seminars & booklet.
- CHEMTREC -- by Manufacturing Chemists Association for round-the-clock notification and assistance in transportation emergencies @ 800-424-9300.
- Union Carbide Help Line is also manned 24 hrs/day for advice on their chemicals @ 304-744-3487.

4. Stewardship Emphasis

Most responsible suppliers maintain a stewardship interest in their products from manufacturing through customer use of the product.

An outstanding example of this effort is Dow's Product Stewardship Program. This program involves a survey of distributor locations, an audit visit by technical staff, followed by an analysis and set of recommendations for each location.

Other suppliers have their own versions of stewardship help available to us. Due to complexities of agreements, proprietary information, and competitive situations, Service Centers should consult their Area and Regional Operations in requesting this help and possibly Regional Marketing in the case of new suppliers.

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CYANIDE POLICY	10/15/86	10/15/86	

POLICY It is the policy of McKesson Chemical to sell cyanides only to technically qualified and approved industrial users.

PROCEDURES Cyanides will be handled in accordance with the following procedures:

1. McKesson will not repackage cyanides.
2. McKesson will **not** provide cyanide samples to anyone. All requests for samples must be submitted to the appropriate supplier.
3. Only Service Centers with authorization can purchase cyanides (Exhibit 1). "Offline" purchasing of cyanides from suppliers, or other McKesson Service Centers is not permitted.
4. All **new** cyanide accounts will be pre-qualified through an inspection by McKesson's Area or Regional Operations personnel or designee **and** the manufacturer's representative. The inspection will occur before the first shipment in order to determine whether the customer is a technically qualified industrial user.
5. Prospective customers will be provided with:
 - a. all current and applicable technical and safety literature provided to McKesson by the manufacturer;
 - b. a McKesson Material Safety Data Sheet for the product;
 - c. a letter of transmittal (Exhibit 2), from McKesson.
6. Shipment can be made only after McKesson has received back a signed copy of the letter of transmittal (Exhibit 2).

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PROCEDURES
(Cont.)

7. Under no circumstances will McKesson sell cyanides "over the counter" for cash or to non-approved customers.
8. In the event that the news media request information on our cyanide sales and/or procedures, the Service Center Manager may discuss our policy and practices presented here. Further inquiries should be referred to Home Office Operations and Corporate Public Relations in San Francisco.

SERVICE CENTERS AUTHORIZED TO HANDLE CYANIDES
7/3/86

CENTRAL

Appleton
Bloomington
Burlington
Chicago Heights
Cincinnati
Cleveland
Kansas City
Milwaukee
Minneapolis
Omaha
St. Louis
Schaumburg
Wichita

EASTERN

Albany
Altoona
Geismar
Lafayette
Little Rock
Philadelphia

WESTERN

Albuquerque
Carlin
Denver
Grand Junction
Los Angeles
Oklahoma City
Orange County
Phoenix
Riverside
San Francisco
Tucson

Customer's Name
Address

Date

Dear _____:

Here is the safe handling literature that McKesson's representative promised to send you during your recent conversation. This includes the McKesson Material Safety Data Sheet and all current and applicable technical literature provided to McKesson by the manufacturer. Your careful review of this information would be much appreciated.

Cyanides require special care and attention and all personnel handling these products should be familiar with proper handling procedures. The procedures for proper handling contained in these publications are suggested as minimum safety procedures. They are intended for use by persons having technical skills and for use at their own discretion and risk. To assure us that you agree and that, as a minimum, you will acquaint your employees and any others who might handle these products with these handling procedures, we ask that you have this letter signed by an authorized official of your company and return a copy to this office.

Your interest in cyanides is very much appreciated. If additional help is needed, please contact us.

Sincerely,

Accepted: _____

Title: _____

Date: _____

Enclosures

McK00136

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HANDLING HAZARDOUS CHEMICALS	9/15/85	9/15/85	

SUMMARY

Many chemicals present no hazard in normal handling and storage. When there is danger, however, materials can be handled and stored safely if the hazardous properties of each are known and the necessary precautions are observed. Many risks can be avoided by (1) the use of precautionary information on the labels of these materials; (2) proper safeguards; and (3) personal protective equipment. This is intended primarily as a guide to the safe storing and handling procedures of hazardous materials since each chemical has its own specific physical properties and reactivity which together determine its potential hazards.

Potentially hazardous materials can be grouped under six basic headings:

1. Toxic or poisonous (including pesticides)
2. Corrosives (including irritants)
3. Flammables and combustibles
4. Oxidizers
5. Materials sensitive to shock or impact
6. Radioactive materials (Because of the special characteristics of this group, it will not be discussed in this subject.)

Each group presents its own specific problems, as does each chemical within the group. For instance, a chemical such as hydrocyanic acid is both poisonous and flammable in some concentrations. Regardless of into what group a hazardous chemical falls, some overall precautions should be taken. For example, safety showers and eye-wash fountains should be available to persons handling materials in any of the five groups, and fire blankets should be available when handling chemicals in group #3, #4, and #5. Another overall precautionary measure is a knowledge of the information on the container labels of dangerous materials.

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LABELS

One of the most important and often neglected aspects of safe storage and handling is reading the label. Labels containing precautionary information stem from a set of principles devised by trade groups and are used widely by chemical manufacturers and packagers.

Label information should be read, as far as practical, by all your employees having anything to do with handling hazardous chemicals. Precautionary labels are designed to be used in addition to, or in combination with, legal requirements. For instance, the Department of Transportation requires all regulated dangerous articles shipped in interstate commerce (unless specifically exempted) to be labeled and color-coded as designated by the commission. This is done to assure proper loading and handling en route to protect carrier personnel and the public.

In addition, with the advent of "Right-to-Know" laws on both the Federal and state levels, the cautionary information on labels of hazardous chemicals will become more and more detailed and explicit.

Precautionary labeling information, however, cannot detail completely the properties of chemicals nor can it specify handling procedures under all conditions. Moreover, it cannot be considered an adequate substitute for either the safety education of employees or the use of proper safety clothing and equipment and control measures such as local exhaust ventilation.

**HAZARDOUS
PROPERTIES**

In addition to the information reflecting the hazardous properties of chemicals as sometimes shown on labels of shipping containers, you should have a knowledge of three basic measures of hazard for each dangerous material you use. They are:

- (1) Explosive limits, i.e., the minimum and maximum proportions of vapor or gas of a flammable material in air within which mixtures of the vapor with air can explode. The proportions are usually expressed in percentage by volume of gas or vapor in air.

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HAZARDOUS
PROPERTIES
(Cont.)

- (2) Flash point (closed cup, open cup, or both), i.e., the temperature at which flammable liquid gives off enough vapor, when mixed with air, to produce a flame if a source of ignition is brought close enough to the surface of the liquid (open cup) or within the container (closed cup). Though the term applies to flammable liquids, certain solids (e.g., camphor) which evaporate slowly at ordinary room temperature have flash points while still in the solid state.
- (3) Threshold limit or permissible exposure, i.e., the maximum concentration of mist, vapor, or dust in the air considered harmless and unobjectionable to most people under continuous exposure (8 hours a day, 5 days a week). It is expressed in parts per million (PPM) for vapor, milligrams per cubic meter (Mg/M^3) for dusts, fumes, and mists, and million particles per cubic foot (Mppcf) for mineral and nonmetallic inorganic dusts.

TOXIC
CHEMICALS
OR POISONS

Frequency of exposure, duration, concentration and method of attack on the body determine the potential hazard of any given poisonous or toxic chemical. Exposure may be to dusts, fumes, mists, vapors, liquids, solids, or gases. Injury may be caused by penetration of the skin, or by breathing contaminated air. Injury by swallowing should not occur if proper precautions are taken in storage and labeling.

When working with toxic chemicals, it is important that average air concentrations be maintained below the recommended threshold limit value; for example, for carbon tetrachloride, below 20 parts per million parts of air by volume and for benzene, below 1 ppm.

Some chemicals are absorbed readily through the skin, causing injury. Examples include amines such as aniline; many nitro compounds such as nitrobenzene; inorganic cyanides such as sodium cyanide; and certain organic cyanides such as methyl cyanide (acetonitrile).

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TOXIC
CHEMICALS
OR POISONS
(Cont.)

Thus, in any control program, precautions must take into consideration the prevention of skin contact as well as regulation of air concentration below the allowable limits.

Control through job placement. In dealing with toxic substances, the use of pre-placement physical examinations is becoming an increasingly accepted practice. These exams enable you to place employees with known disabilities in jobs where the potential hazards of exposure will not constitute an added threat to their health. For example, workers with lung diseases should not be exposed to vapors and dust which can cause lung injury. In addition, medical evaluation of workers exposed to potential occupational hazards should be conducted regularly by a physician familiar with the hazards involved.

Because of the liability potential, both present and future, that is involved in such job assignments, none should be made without involvement of the Corporate Law Department.

Control through ventilation or process enclosure. Ventilation or process enclosure are generally the most important means of control and the most frequently used. General ventilation systems use fans or blowers with suitable ductwork to provide the work area with fresh air and draw out contaminated air. This dilutes the amount of vapor or dust in the area. Local exhaust ventilation systems employ the principle of capturing the contaminated air at its point of release and exhausting it to the outside.

Control through proper container handling. Storage of drums and other containers holding volatile toxic chemicals should be out of the direct rays of the sun and be protected against conditions that might contribute to a build-up of pressure within the container. The storage area, if indoors, should be cool, well ventilated, and free from dampness and direct heat. Drums should be stored with their body plugs and bungs upward.

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TOXIC CHEMICALS OR POISONS (Cont.)

Preferably, drums should be emptied by pump or by gravity, using a self-closing faucet. It is especially dangerous to use air pressure if the toxic material is also flammable. Drums should be completely drained and their plugs securely replaced. Water or any material foreign to the drum's original contents should not be introduced into the drum. Reusable or single-trip drums to be returned should not be washed. All closures must be tightly replaced. Finally, drums should be stored away from heat or open flames.

Control through protective clothing. Circumstances and the physical characteristics of the chemical involved dictate the type of personal protective equipment worn before opening any container of a toxic chemical or before cleaning up spills. Irritating liquids such as xylene, formaldehyde, butyl alcohol, and turpentine require eye protection (e.g., safety goggles or face shields) to protect workers against the danger of direct splash. Available respiratory protection against chemical vapors, gases, and dusts includes self-contained breathing apparatus, positive pressure hose masks, airline respirators, or industrial canister-type gas masks. The type used is governed by the degree of protection needed, nature of the exposure, and type of contaminant.

For foot protection, leather safety shoes may be recommended for workers handling drums and heavy cans. But rubber shoes, or those of an equivalent impermeable material, should be worn when handling acids or other corrosive material.

CORROSIVES

Chemicals classified as corrosives include strong acids, acid anhydrides, and alkalis, which can cause chemical burns of the skin and eyes. Some acid fumes can react with such materials as sulfides, cyanides, and others to form toxic vapors. Some of the most hazardous chemicals in this group are the mineral acids such as sulfuric, nitric, hydrochloric, chromic, and hydrofluoric and strong alkalis such as sodium hydroxide. Examples of corrosives with a comparatively lower degree of handling hazard are benzoic and phosphoric acids.

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CORROSIVES
(Cont.)

Handling and storage of drums containing corrosives are generally the same as for toxic chemicals. Filled containers of corrosives should be kept closed, handled carefully, and isolated from incompatible materials. All exposed metal should be painted. Generally, spillage is handled by washing it to a new neutralization pit with copious applications of water, although acids can be neutralized with soda ash or lime.

When handling or storing corrosives, safety showers or adequate water hose should be readily available. In addition, protective clothing -- face shields, goggles, rubber boots, aprons, and gloves -- should be worn.

FLAMMABLES

Materials which ignite easily under normal industrial conditions are considered to be dangerous fire hazards. In the context of this subject, only liquids will be considered, although flammables include gases and any finely divided combustible dust.

It is sound practice to keep a reference file on flammable liquids. (The properties of many common flammable liquids are available from their manufacturers or suppliers as well as other easily accessible sources.) Generally, such a file records the following properties: flash point (closed or open cup); autoignition temperature; explosive limits; vapor density ratio; boiling point; reactivity.

When not superseded by city or local restrictions, outside storage of flammables should be limited in quantity to 100 drums per group. Large quantity groups should not be located closer than 50 feet to an important building. Smaller groups may be located more closely: for 5-drum groups of extremely flammable liquids (closed cup flash point, 20 to 100 degrees, Fahrenheit), the distance should be at least 10 feet. Adequate spacing, preferably at least 25 feet, should be maintained between groups.

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FLAMMABLES (Cont.)

When there is any possibility of splashing or spilling in the handling of flammables, complete eye and/or face protection should be worn. Respiratory protection should be used as required, and other protective equipment must be selected according to the seriousness of the hazard involved.

OXIDIZERS

Chemicals which may cause fire upon contact with organic or combustible materials, or may intensify a fire by supplying oxygen, are generally considered as oxidizers. Such oxidizing agents as chlorates, nitrates, peroxides, hypochlorites, and perchlorates can cause explosions and fires from contact with organic matter.

In general, oxidizers should be stored in fireproof structures with concrete floors and separated from organic materials. Spills, if solid, can be swept up, or washed away if liquid.

Some of the oxidizers are relatively stable by themselves but upon contact with strong acid or organic substances react violently. For this reason, it is important that you know their chemical and physical properties and take necessary protective precautions accordingly.

SHOCK AND IMPACT SENSITIVE MATERIALS

Typical of this group are dry organic peroxides and nitromethane. All phases of handling and storing of these chemicals in your plant should be written down. Rules governing all buildings, including emergency procedures, should be posted conspicuously. All tools, equipment, and construction materials -- even such items as dustpans and brooms -- should be chosen for their resistance to producing sparks, static, or chemical reaction.

Temperature in storage should be regulated where necessary to avoid critical extremes. Stock should be segregated from other hazardous and incompatible chemicals. Only closed containers should be allowed in

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SHOCK AND
IMPACT
SENSITIVE
MATERIALS
(Cont.)

the storage area and they should be removed from the building for opening. Any possibility of deterioration from moisture, light, temperature, or other cause should be minimized by rotating stocks.

Housekeeping standards must be high and rigidly maintained in the handling of shock and impact-sensitive materials. Floors must be kept clean, free from spills and broken containers at all times. Sweepings should be picked up and rendered harmless by chemical means, if feasible, or disposed of through regular waste channels.

HAZARDOUS
WASTES

In addition to the preceding comments, hazardous wastes brought into a McKesson facility pose their own problems. Although every container of such waste is specifically labeled, their contents are indeed wastes, and many contain contaminating substances that pose safety problems in their own right. It is essential that hazardous wastes stored at a McKesson facility be evaluated in the context of the customer's operation that generated them.

COMPAT-
BILITIES

Although many hazardous chemicals can be easily and safely handled in their own right, their danger can be greatly increased if they come into contact with other species; for example, acetic anhydride can be expected to react with isopropyl alcohol.

Similarly, some chemicals react violently even with water -- for example, sodium hydrosulfite. Such materials must be kept indoors and away from any source of moisture.

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OSHA HAZARDOUS CHEMICAL LIST

OSHA Hazardous Chemical reporting is controlled by the OLE system through the production of Hazardous Chemical Lists and Material Safety Data Sheets.

Two reports are produced to support Service Center requirements for lists of hazardous chemicals stocked in inventory. The first report is CD03R05Q, OSHA Hazardous Chemical List By Product. This report is produced the last day of each month and will be in the Service Center queue (class 1, form D 033) the following day.

In order to keep this report up to date, a daily on-line report (CD03R05R) is produced whenever an active inventory record is added for the Service Center.

The daily report lists only those items added to the inventory file for a particular day. All daily lists must be reviewed in conjunction with the previous month-end report to obtain a complete list of hazardous chemicals which may be stocked at a location.

CD03R05Q and CD03R05R should be filed in Appendix 1, of the Hazardous Communications Program manual. Previous months' reports can be discarded when CD03R05Q is produced for a new month.

MATERIAL SAFETY DATA SHEET PROCEDURES

Material Safety Data Sheets (MSDS) for each hazardous chemical are maintained in one National file by the Home Office Operations Department. Product records are then updated to indicate that the product requires an MSDS and the date the MSDS for the product was created or last changed. MSDS's can be created at either the product root or SKU level but normally an MSDS at the product root level will be adequate for SKU's existing under that root.

MSDS's entered into the system will be numbered the same as the product root or SKU for which they were created. Hard copies of MSDS's will be produced automatically for customer orders containing hazardous chemicals and can be produced on a request basis to satisfy employee information requirements.

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EMPLOYEE ACCESSI- BILITY

Hard copy MSDS's are available to all employees through use of the NPDI transaction. This satisfies the requirement to make an MSDS accessible to an employee. The procedure to produce an MSDS copy for an employee will be to have the Administrative Manager enter transaction NPDI and bring up the SKU the employee wants the MSDS for. When the SKU is displayed on the screen, a next code of "M" (for MSDS) should be entered and the enter key pressed. An MSDS report will then be placed in the VPS queue class 1, form A013. The MSDS produced will be for the SKU if one exists at that level or the product by default. If the "M" is not displayed in the available next codes, it means that there is not an MSDS in the system for the product. The VPS operator should sign on, print the MSDS and deliver it to the Administrative Manager.

Service centers can also order copies of MSDS's through the Technical Director, Home Office Operations. The print out will be alphabetized and custom printed to contain only the products identified on the Service Center's OSHA Hazard Chemical List (CD03R05R).

CUSTOMER DISTRIBU- TION

MSDS's will be produced for customer orders containing hazardous chemicals under the following circumstances.

- First time a hazardous chemical is ordered by a customer.
- First time a customer orders a hazardous chemical after a change to the MSDS in the system.
- First time a customer orders a hazardous chemical if a year has elapsed since the customer was last issued an MSDS.

Each time an MSDS is issued to a customer for a hazardous chemical, the MSDS date in the customer menu record for that product will be updated. This date is then used to compare to the MSDS date in the product record to determine when a new MSDS is required by the customer.

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REGULAR WORK ORDERS - (NOEN)

The bills of lading and MSDS's produced for RWO's will be cross referenced. When an MSDS is required for a product on a bill of lading the message "MATERIAL SAFETY DATA SHEET FOR PRODUCT XXXXXXXX ATTACHED" will be printed following normal bill of lading product identification. The MSDS will contain the customer name and address and the work order number identifying the bill of lading to which it should be attached. The bill of lading will also contain the following wording following all product information: "SIGNATURE ON THE 'RECEIVED BY' LINE, BELOW, ALSO ACKNOWLEDGES RECEIPT OF A MATERIAL SAFETY DATA SHEET(S) FOR NOTED HAZARDOUS CHEMICALS IN THIS SHIPMENT." All MSDS's should be attached to the appropriate bills of lading and delivered to the customer.

REGULAR WORK ORDERS - (NPOE)

Preshipped orders will automatically create an MSDS when they include a hazardous chemical. When NPOE is used to enter an order, the VPS operator should install plain paper in the printer and print the MSDS from class 1, form A015. MSDS should then be mailed to the customer.

DIRECT ORDERS

Direct orders (DIR) will also produce an MSDS whenever (NPSH) shipment confirmation is run against a direct order. The operator should retrieve these MSDS's daily by using VPS to print class 1, form A014. MSDS should then be mailed to the customer.

Each transaction which initiates the printing of MSDS documents does so by initiating a second program which creates the report in the VPS print queue. If a machine or communications failure occurs the program may not complete, and all required MSDS documents may not be created. If this happens the message "MSDS PRINT DID NOT COMPLETE SUCCESSFULLY" will be sent to the originating location. It will then be necessary for the operator to determine which MSDS's are missing and recreate them.

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RECREATING MSDS

The procedure for recreating MSDS's varies depending upon which transaction created them. If the MSDS's were created by a bill of lading run, all MSDS's which were printed should be matched to the appropriate bills of lading for distribution to the customer and checked off on the bill of lading control report. Any bill of lading requiring an MSDS, ("*" behind its number on the control report) which did not have an MSDS attached should be separated and an MSDS produced using the NPOI "M" function. If an exceptionally large rerun of MSDS's is required, contact the Manager of Information Services at the Home Office for alternate instructions.

If MSDS's have to be recreated for NPSH or NPOE transactions, they must be recreated using the NPDI "M" next code option. In this case the MSDS will not include the customer name. The customer name and address and order number should be typed on the MSDS or a cover letter prior to mailing to the customer.

An on-line control report will be produced daily listing all orders for which an MSDS should have been produced the previous day. Work order numbers from the bill of lading runs, direct orders and NPOE should be compared to this report to ensure that all required MSDS's were produced.

CUSTOMER ACKNOWLEDGEMENTS

The bills of lading and MSDS's produced for RWO's will require obtaining a customer signature on the bill of lading and retention of the signed bill of lading acknowledging receipt of the MSDS. Retention periods and procedures are currently being developed by the Home Office Operations Department. Customer signatures will not be obtainable for NPOE, direct orders, or orders delivered by common carrier, and the updated customer record will be the documentation for these orders. The signed bills of lading should be retained until further notice. Do not discard these documents.

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**MAINTENANCE
AND CHANGES**

MSDS's will be revised from time to time. The revisions are required when we learn of significant new information or when we detect errors in the current MSDS version.

The MSDS will also be revised as soon as the manufacturer advises us of new information. If the new information is significant, the Technical Director will alert all Service Centers by mailbox that a significant change has occurred and will identify the change. The mailbox message will be followed later by a letter explaining the reasons for the change and any subsequent action required by the Service Center.

In all cases, the date of the revision will be put into the "Date Issued" field and the superseded date will be put into the "Supersedes" field.

**MSDS
DOCUMENTATION:
STOCKPOINT
SHIPMENTS**

In certain cases, Service Centers will call in an order for immediate shipment from a stockpoint. The bill of lading is then hand-generated at the stockpoint. In these cases, the Service Center will print out the OLE bill of lading and the appropriate Material Safety Data Sheets. The Service Center will mail the MSDS's and make a handwritten notation of the mailing on the OLE printed bill of lading (for example, MSDS mailed 1/25/85, initials). This bill of lading should be retained in the same manner as other bills of lading.

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HOUSEKEEPING	9/15/85	9/15/85	

DEFINITION

Housekeeping, or "good housekeeping" as it is generally known, is essentially a state of orderliness as evidenced by the proper storage and handling of materials in raw, intermediate, and finished stages, efficient disposal of wastes, prompt removal of spillage, and general maintenance of premises and equipment to assure that they are free of dust, drippings, spatters, and overflows.

RESPONSIBILITY

Good housekeeping, like safety, is everyone's concern, but management has the responsibility to assure that a clean and orderly work environment is maintained. Individual assignment and accountability is normally essential however, to assure desired results on an on-going basis. Good managers and direct supervisors will reinforce the importance of good housekeeping and its overall impact on their operation.

BENEFITS DERIVED

Good housekeeping is good business. Just as poor housekeeping will negatively impact an operation, good housekeeping will have a positive impact.

Proper housekeeping goes hand-in-hand with an efficient operation. Work organization will be enhanced. Interruptions due to congestion, rehandling, etc., will be minimized.

The elimination of poor housekeeping will reduce fire hazards, making a safer operation.

There is a definite relationship between housekeeping and accidents. Statistics indicate that more than 50 percent of industrial injuries are directly traceable to falls, falling objects, and the mishandling of materials, and that such injuries are frequently a result of poor housekeeping.

Downtime can be reduced due to inoperative equipment, resulting from contact with damaging materials or atmospheres. Lower maintenance costs of equipment should result from good housekeeping practices.

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**BENEFITS
DERIVED
(Cont.)**

Of primary significance, a more efficient and safer operation will improve and enhance worker morale.

**IMPLEMENTA-
TION**

"Workflow" within an operation should be studied so that equipment and operations are arranged to eliminate "bottle-necks." Additional factors affecting housekeeping are as follows:

1. Work areas should be properly illuminated.
2. Aisles and passageways should be kept clear at all times. Walkways and ramps should be entirely clear of materials and equipment at all times. These should be properly identified by floor striping to indicate limitations and to encourage use of proper storage locations.
3. Floor surfaces should be kept clean, dry, and free of holes or projections. Chemical dust or residue should be cleaned up upon discovery. The periodic use of a floor scrubber is recommended to reduce build-up of deposits from lift truck tires, oil drips, and to eliminate the corrosive effect of some materials in contact with the floor surface. The use of a floor scrubber can also reduce slippery conditions brought about by floor condensation. (Do not use absorbent clays on wet or damp floors except to dike or absorb spills. The clays become extremely slippery and hazardous and difficult to remove when compacted by lift trucks. Use sharp sand to reduce slippery conditions created by damp floors.)
4. Pallets should be kept in good repair. Broken boards or projecting nails can bring about increased operating expenses far greater than the pallet repair or replacement cost. Unused pallets should be properly and neatly stacked.

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IMPLEMENTA-
TION
(Cont.)

5. Proper aisle and passageway arrangement and clearances should be maintained. Storage clearances from buildings and storage adjacencies must be observed. Yard storage should be arranged to provide for empty and full containers.
6. Unpaved yard areas should be free of weeds to diminish fire hazard and to project a neat appearance.
7. Lawns should be kept mowed and shrubbery trimmed.
8. Every effort should be taken to avoid spillage during the unloading of boxcars. Rail sidings should be inspected after each use to assure that the area is free of any residue or spillage.
9. Buildings, roofs, canopies, storage tanks, etc., should be kept in good repair and appearance. Functional painting is an aid to good housekeeping. Lighter wall colors on building interiors can assist in housekeeping efforts. Likewise, clean windows can improve visibility.
10. Equipment should be maintained for appearance as well as efficiency.
11. Tool cribs and tool racks encourage good housekeeping and promote efficiency by eliminating hazardous storage of tools around the warehouse or yard area.
12. Trash barrels and containers should not be allowed to overflow and should be emptied daily. Trash service receptacles which are picked up periodically should be kept closed and away from the building to minimize fire hazards.
13. Broken bags or leaky drums should be attended to immediately to minimize spillage.

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IMPLEMENTA-
TION
(Cont.)

14. Conditions which permit the discharge of toxic or objectionable smoke, dust, dirt, fumes, odors, etc., into the atmosphere or the vicinity surrounding the operation should be corrected. The installation of proper devices designed to eliminate or reduce air pollution is a part of plant housekeeping activities. Care must be taken to assure the safe collection and disposal of dusts and fumes.

SUSTAINING
INTEREST

Sustaining interest is a vital part of a good housekeeping program and requires the wholehearted support of all employees. The individual support of a good housekeeping program is evidenced by the housekeeping condition of the work area. Supervisory and management support for such a program is also evident. Good housekeeping is an integral part of each employee's job performance.

A well organized and diversified housekeeping program can be stimulated and maintained by:

1. Regular safety meetings with fellow employees which provide the opportunity to exchange ideas and to generate concern.
2. Regular safety committee meetings to consider corrective action for housekeeping problems.
3. Suggestion systems which encourage employees to contribute toward housekeeping. Awards for suggestions can also enhance interest.
4. Publicity through posters, bulletin boards, and employee publications. Posters should be colorful, to the point, and should be changed frequently. Displays or pictures of bad practices can also be used to advantage.

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SUSTAINING
INTEREST
(Cont.)

5. Regular housekeeping inspections. Employee safety and housekeeping go hand-in-hand, thereby making frequent inspections essential. These include:
 - a. Daily inspections by employees and supervisors.
 - b. Weekly or monthly inspections for safety or fire protection purposes.
 - c. Quarterly Safety and Compliance Reviews.

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GENERAL

Hazardous conditions in the office are just as imminent as in the warehouse unless precautionary or corrective measures are taken. Safety is each employee's concern, but management has the responsibility to assure that the office is a safe environment in which to work.

Good office managers will maintain an "awareness" for safety by emphasizing its importance on an on-going basis. Recognition of safety hazards, the use of printed safety tips, informative posters, checklists, safety committee meetings, suggestion programs, Quarterly Safety and Compliance Reviews, among other things contribute to an "awareness" for safety.

The following situations are typical of what can occur in an office. With each situation, comments regarding preventive or corrective measures are stated.

<u>DANGEROUS SITUATION</u>	<u>PREVENTIVE/CORRECTIVE MEASURES</u>
1. Office machinery has nip points or sharp areas that cut or pinch.	All office equipment should be switched off during inspection.
2. Person walking by secretary catches clothes on typewriter.	Typewriters should be placed so that carriage cannot be returned into a walkway.
3. Someone trips over a portable heater or fan that has been moved into a walkway.	Portable units should be secured in an out-of-the-way place.
4. Person puts finger through an inadequate guard or fan or heater.	Make sure that proper guards are in place on both sides of fan and on heaters.

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GENERAL (Cont.)

DANGEROUS SITUATION

PREVENTIVE/CORRECTIVE MEASURES

- | | |
|---|--|
| 5. An unexpected electrical shock is experienced. | Electrical cords and receptacles must be kept in good condition. Grounded wiring and appliances should be used. |
| 6. Box or wheeled chair used to reach an out-of-the-way place. Window sill stood on to open a window lock near the ceiling. | Proper equipment, such as ladders or step stools, should be used at all times. |
| 7. Heavy boxes lifted or moved incorrectly. | Assistance by another person and proper lifting techniques should be used. |
| 8. Two heavy top drawers of a filing cabinet pulled out at the same time. | Heavier drawers should be positioned low in a filing cabinet if possible. Cabinets can be secured to floor to prevent toppling. The practice of closing each drawer after use should be practiced. |
| 9. Tightly packed drawers and protruding staples cause paper cuts when something must be pulled or filed. | Materials in drawers should be distributed so as not to cause over-crowding and paper cuts. |
| 10. A finger is lacerated due to inattention at the paper cutter. | Strict attention should be paid to keeping a paper cutter in closed position when not in use. |

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GENERAL (Cont.)

DANGEROUS SITUATION

PREVENTIVE/CORRECTIVE MEASURES

- | | |
|---|---|
| 11. A small cut is experienced while going through a supply cabinet or desk. | Tacks and straight pins should not be mixed with paper clips in the same container. Sharp objects, such as scissors, razor blades, or letter openers, should be sheathed or stored when not in use. |
| 12. Paper cuts are experienced during collating. | Use a "rubber finger." |
| 13. An employee trips over a waste basket adjacent to an aisle. | Desks, file cabinets, trash receptacles, etc., should be located so that personnel movement is taken into consideration. Move waste basket to the position away from the aisle. |
| 14. Late on a winter evening, an employee trips on the front steps leaving the office. | Inadequate lighting at entrances, stairwells, etc., can bring about falls. |
| 15. An employee loses footing when stepping on an extension cord and bruises herself against a nearby desk. | The overuse of extension cords should be prohibited because it is a fire hazard. Where they are required for use, they should be protected by a runner. |
| 16. A person slips when coming in from outside into the entrance area. | Floor mats should be used to dry off shoes. Boards or floor tiles should be replaced as required. Miscellaneous items such as paper clips, pencils, etc., should be picked up when observed. |

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SUMMARY

The purpose of this procedure is to eliminate the possibility of either injuries to personnel (whether they be McKesson employees or outside contract labor), or incidents involving equipment when maintenance, repair or construction work is being done at our service centers or packaging facilities. Supervision must exercise its responsibilities for checking out all the facts before any work is contemplated and must "lockout" any possibility of an accident occurring by taking the necessary safeguards.

These are general guidelines to assist the Operations Manager in structuring a Maintenance Safety Checkout plan. Included are points which are generally found in a "Safety Lockout Procedure" used in the chemical industry. This outline covers a wide spectrum of activities which may be found in smaller McKesson service centers up to the larger Bulk Plants. Many times, on larger repairs especially, it is helpful to contact the Region for their input. Drawing on the experience of others furthers the chances that the job will be done according to code and/or acceptable standards.

Even though this list may appear to include excessive detail, it is strongly recommended that the responsible individual go through the outline to make certain nothing has been overlooked. A suggested Equipment Checkout form is included (see Exhibit 1) to formalize the considerations listed in this procedure.

PREPARATION AND PLANNING

1. What is the exact nature of the maintenance need?

For example, flange on the chlorinated solvent line is leaking and the gasket requires replacement; or the valve on the sulfuric acid tank does not completely shut off, allowing a small flow of acid indicating that the valve may need replacement. Is there a backup valve that can be locked or tagged to prevent additional flow while repairs are being made? Do repairs require fume removal or protective clothing? Is there a fire hazard? Are all required materials on hand?

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PREPARATION
AND
PLANNING
(Cont.)

2. If the job requires dismantling, or work on or in the interior of a pump, line or tank, what were the last contents or the equipment? Has the equipment been sufficiently cleaned out?

For example, in the case of chlorinated hydrocarbons such as 1,1,1 - Trichloroethane, or Methylene Chloride, there may be only traces of liquid in a pump, line or tank, but the vapor space will be essentially saturated with vapor: any close contact by personnel will easily lead to exposures in excess of recommended safe levels set for inhalation. Fumes from acids, Nitric, Hydrochloric, and Sulfuric are extremely treacherous.

Should there be any question about vapor levels in tanks or areas, be certain always to resort to use of appropriate respirators or face masks recommended for the product. Since respirators are good for only short periods of time, an extended effort to remove the fumes before attempting to work in the area should be made. If it is necessary to work in a recently contaminated area, in addition to the use of respirators and masks, always use the buddy system.

The buddy system consists of one employee stationed a short distance away from the person entering the hazardous area. The sole responsibility of the first worker is to provide assistance should it be needed. Obviously, this person must be fully prepared and equipped for the type of emergency relative to the particular situation.

3. If a cleanout of any equipment is required, does the cleanout present an environmental pollution problem? Can this be avoided?

If the material is of a corrosive nature, transfer it by safe means to appropriate drums, or to the neutralizing pit, and adjust pit to neutrality. In the case of solvents, use all reasonable means to catch any spillage and transfer it to an appropriate drum.

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PREPARATION
AND
PLANNING
(Cont.)

4. Is there an MSDS on the material in a line, tank or piece of equipment to be repaired, and are the usual considerations indicated? These include:
 - a. Flammability and/or explosiveness of air mixtures
 - b. Combustibility
 - c. Corrosiveness
 - d. Poisonous
 - e. Water soluble
5. Have any unusual properties of the previous contents of a line or tank or pump been discussed with the employee, and is he/she equipped to deal with this situation? Does the McKesson service center have the required protective equipment?
6. In case of welding needs, whenever possible a contractor who has an explosion meter should be selected. This becomes essential if the scheduled work involves equipment which contained combustibles or flammables, or where these are close to the area where the welding is to take place. Will welding present any toxic fumes that the welder should be protected against?
7. If electrical work is contemplated, or if electrical equipment needs to be shut down during work, is there a master switch that can be locked out by padlock or bolt? Will the lockout affect other activities? Can a fuse be pulled? How can power being inadvertently turned on be prevented?
8. If a change in piping, valving or wiring of a substantial nature is contemplated, in the interests of safety and good industrial practice this change should be noted on applicable engineering drawings. Both the Region and Home Office should be notified.

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PREPARATION
AND
PLANNING
(Cont.)

9. Upon completion of the job:
 - a. Who will be responsible for confirming the job is completed as requested?
 - b. Who will remove safeguards imposed, and/or restore use of the equipment?

EQUIPMENT CHECKOUT FORM

Service Center _____ Date _____

Person completing form _____

What type of craft is needed? Electrical _____ Welding _____

Pipe Fitting _____ Mechanical _____

What is to be done? _____

What was last in the equipment or most likely to have left traces?

If required, how has the equipment been cleaned? _____

If welding or entry are contemplated, is explosion meter test
advisable? _____

If entry is required, have the fuse blocks been removed from the
control panel or on/off lever locked out in the off position? _____

By whom? _____

If other lines and/or equipment are in use nearby in situations where
spills or leakage pose a threat, the valves must be locked shut and
transfer lines capped. Necessary _____ Accomplished _____

Who in authority confirms that the equipment is ready for repairs
(cleanout free of toxics, flammables, combustibles)? _____

_____ Time _____

Who will confirm the job is completed, and any safety measures
(lockout) removed? _____

Job Completed: Date _____ Time _____

By _____

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PERMISSIBLE
PRACTICE

The objective of a respiratory protection program is to prevent and control exposure to atmospheric contamination potentially resulting in occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. The primary manner of accomplishing this goal should be by means of accepted engineering control measures designed into the work area (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators that are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined below.

The employee shall use the provided respiratory protection in accordance with instructions and training received. Appropriate instruction on selection and use of respiratory protection must be provided all employees before use of such equipment. Exhibit 1 is an example of an instruction booklet.

MINIMAL
ACCEPTABLE
PROGRAM
REQUIRE-
MENTS

1. Written standard operating procedures governing the selection and use of respirators shall be established.
2. Respirators shall be selected on the basis of hazards to which the worker is exposed.
3. The user shall be instructed and trained in the proper use of respirators and their limitations.
4. Where practicable, the respirators should be assigned to individual workers for their exclusive use.

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MINIMAL
ACCEPTABLE
PROGRAM
REQUIRE-
MENTS
(Cont.)

5. Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.
6. Respirators shall be stored in a convenient, clean and sanitary location.
7. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.
8. Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained. Concerns regarding work area conditions are to be immediately brought to the supervisor's attention in order to initiate corrective measures.
9. There shall be regular inspection and evaluation to determine the continued effectiveness of the program.
10. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that no other feasible manner of conducting the work is possible. (Example, use of dust masks in bagging operations.) In such instances, the respirator user's medical status should be reviewed periodically (for instance, annually) to insure no physical effects from such use are evident. A local physician should be consulted if there is question as to what health and physical conditions are pertinent.
11. Approved or accepted respirators must be used. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U. S. Department of Labor, Occupation Safety and Health Administration is such an authority.

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SELECTION
OF
RESPIRATORS

Respirators shall be selected on the basis of the hazards to which workers are exposed (29 CFR 1910.134), and ANSI 288.2-1980 shall be used for guidance in the selection of proper respirators.

AIR QUALITY

Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification of Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

Breathing air may be supplied to respirators from cylinders or air compressors.

1. Cylinders shall be tested and maintained in as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178). This standard specifies, for example, a hydrostatic test on a typical self-contained breathing apparatus tank, once every five years.
2. The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable inline air purifying sorbent beds and filters installed to further assure breathing air quality. Units equipped with air purifying systems such as this must have a routine filter servicing schedule established. A receiver of sufficient capacity to enable the respirator wearer to escape

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**AIR QUALITY
(Cont.)**

from a contaminated atmosphere in the event of compressor failure, and alarms to indicate compressor failure and over-heating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be frequently tested for carbon monoxide to insure that it meets the specifications described in 1. above.

3. Breathing air-line couplings within a facility shall be incompatible with outlets for other gas systems to prevent inadvertent hook-up of air line respirators with nonrespirable gasses or oxygen.
4. Breathing gas containers shall be marked in accordance with American National Standard Institute Method of Marking Portable Compressed Gas Containers to Identify the Material Container, Z48.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

**USE OF
RESPIRATORS**

Standard procedures shall be developed for respirator use. These should include all information and guidance necessary for their proper selection, use, and care. Potential emergency and routine uses of respirators should be anticipated and planned for. Review of respiratory equipment should be conducted on an ongoing basis during operational meetings with employees.

The correct respirator shall be specified for each job. The respirator type is usually specified in a particular situation or job function by a qualified individual supervising the respiratory protection program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual should be durably marked to indicate to whom it was assigned.

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USE OF
RESPIRATORS
(Cont.)

This mark shall not affect the respirator performance in any way. The date of issuance should be recorded. Routine inspection during cleaning should be conducted to determine the need for replacement.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be temporarily encountered in an operation or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

1. In given situations where the wearer, given the potential of an unexpected failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present in general proximity to the primary worker. Communications (visual, voice, or signal line) shall be maintained between any and all individuals present. Planning shall be such that one individual will be unaffected by any possible incident which could occur based upon the circumstances being present. He will have the proper rescue equipment to be able to assist the other(s) in case of emergency.
2. When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment.
3. Persons using air-line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres, and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

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USE OF
RESPIRATORS
(Cont.)

Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

For safe use of any respirator, it is essential that the user be properly instructed in its selection, use and maintenance. Both supervisors and workers shall be so instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a period of time to gain familiarity, and, finally, to wear it in a test atmosphere.

1. Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Physical conditions which could contribute to an inadequate face seal could include a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This should be done by following the manufacturer's facepiece fitting instructions.
2. Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed. Systems have been developed

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USE OF
RESPIRATORS
(Cont.)

for mounting corrective lenses inside full facepieces. When a workman must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by qualified individuals to provide good vision, comfort and a gas-tight seal.

3. If corrective glasses or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

MAINTENANCE
AND CARE OF
RESPIRATORS

A program for maintenance and care of respirators shall be adjusted to the type of plant, working conditions, and hazards involved, and shall include the following basic services: (See Exhibit 2)

1. Inspection for defects (including a leak check)
2. Cleaning and disinfecting
3. Repair
4. Storage

Equipment shall be properly maintained to retain its original effectiveness.

All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly. A monthly inspection checklist is included in Exhibit 2 for self-contained breathing apparatus.

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**MAINTENANCE
AND CARE OF
RESPIRATORS
(Cont.)**

Respirator inspection shall include a check of the tightness of connections and the condition of the face-piece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them from taking a set during storage.

A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

Routinely used respirators shall be collected, cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected respirator. Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

Replacement or repairs shall be done only by experienced persons with parts designed for the respirator. Problems with any respiratory piece of equipment experienced by the wearer are to be brought to the supervisor's attention immediately. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

After inspection, cleaning and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

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**MAINTENANCE
AND CARE OF
RESPIRATORS
(Cont.)**

Respirators should be packed or stored so that the face-piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

**IDENTIFICATION OF GAS
MASK
CANISTERS**

The primary means of identifying a gas mask canister is typically by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code (see pages 11 and 12).

All who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and color coded in accordance with these requirements before they are placed in service, and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

On each canister shall appear in bold letters the following:

Canister for _____
(Name for atmospheric contaminant)
or
Type N Gas Mask Canister

In addition, essentially the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than _____ percent by volume of _____."
(Name of atmospheric contaminant)

All of the markings specified above should be placed on the most conspicuous surface or surfaces of the canister.

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.80	10	
Subject	Issue Date	Effective Date	
RESPIRATORY PROTECTION	9/15/85	9/15/85	

IDENTIFICATION OF GAS MASK CANISTERS
(Cont.)

Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume) since gas mask canisters are designed only to neutralize or remove contaminants from the air.

Each gas mask canister shall be painted a distinctive color or combination of colors indicated in the following table. All colors used shall be clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

EXHIBIT

Exhibit 1 follows the table. This is a reprint of a pamphlet published by the U.S. Department of Health, Education and Welfare and was prepared by the National Institute for Occupational Safety and Health.

Where we use such protection, this article should be made freely available to our employees as well as being a frequent topic for safety meeting discussion.

Section	Reference	Page	End
GENERAL SAFETY	10.80	11	
Subject	Issue Date	Effective Date	
RESPIRATORY PROTECTION	9/15/85	9/15/85	

TABLE

Atmospheric contaminants to
be protected against:

Colors assigned

Acid gases	White
Hydrocyanic acid gas	White with 1/2-inch green stripe completely around the canister near the bottom.
Chlorine gas	White with 1/2-inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black
Ammonia gas	Green
Acid gases and ammonia gas	Green with 1/2-inch white stripe completely around the canister near the bottom.
Carbon Monoxide	Blue
Acid gases and organic vapors ..	Yellow
Hydrocyanic acid gas and chloropicrin vapor	Yellow with 1/2-inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown
Radioactive materials, excepting tritium and noble gases	Purple (Magenta)
Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors	Canister color for contaminant as designated above, with 1/2-inch gray stripe completely around the canister near the top.
All of the above atmospheric contaminants	Red with 1/2-inch gray stripe completely around the canister near the top.

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.80	12	X
Subject	Issue Date	Effective Date	
RESPIRATORY PROTECTION	9/15/85	9/15/85	

TABLE (Cont.)

Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

PREFACE

Respiratory protective equipment can be effective in protecting you from the inhalation of hazardous amounts of airborne contaminants. However, this effectiveness is dependent on the respirator being properly fitted, maintained in good condition, and most importantly, on your knowing its proper uses and limitations. If the contaminants in your work environment require you to wear a respirator, then wear it; the alternatives are not worth the risk. Exposure to high concentrations of a toxic substance, even for a short time, can cause serious injury or death; and even exposure to lower concentrations of certain toxic substances for long periods of time can cause permanent damage to critical body organs such as lungs, liver, and kidneys. Work environments where the oxygen content of the air you breathe is below acceptable levels can also be hazardous.

As a user of respiratory protective equipment, you have the right:

1. To know what hazards you are being exposed to and the reasons why a particular respirator was selected;
2. To be instructed in the use of equipment;
3. To be allowed to wear the equipment in a test atmosphere so as to check for leakage and proper fit;
4. To be advised of the capabilities and limitations of the equipment; and
5. To be instructed in the proper maintenance of the respiratory protective equipment.

This guide, prepared for you, discusses the above aspects in some detail to enable you to understand the do's and don'ts of respirator usage to safeguard your health from airborne hazards encountered in the work environment.

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INTRODUCTION

The Occupational Safety and Health Administration (OSHA) has set maximum levels for many airborne toxic materials. If you are exposed to amounts of these materials in excess of the standard, the law requires that your employer install, implement, or institute feasible engineering or administrative controls so as to reduce your exposure to acceptable levels. If these controls do not prove feasible, or while they are being installed/instituted, your employer is required to furnish appropriate respiratory protection to each exposed employee. You may also have to wear respiratory protective equipment during cleaning and maintenance activities where you are briefly exposed to high concentrations of a hazardous substance. Further, your employer is required to establish a respiratory protection program with written standard operating procedures which detail, among other aspects, how the respirators were chosen and how they are to be used and maintained.

You should be familiar with the respirator selected and the proper maintenance procedures for the equipment.

1

2. Particulate Contaminants

Particulate contaminants are made of tiny particles or droplets of a material. There are three types of particulates:

- a. Dusts are solid particles produced by such processes as grinding, crushing, and mixing of powder compounds. Examples are sand and plaster dust.
- b. Mists are tiny liquid droplets given off whenever a liquid is sprayed, vigorously mixed, or otherwise agitated. Acid mists around diptanks used for metal cleaning and oil mists near newspaper printing presses are two examples.
- c. Fumes are tiny metallic particles given off when metals are heated. Fumes are found in the air near soldering, welding, and brazing operations as well as near molten metal processes such as casting and galvanizing. The two basic forms — gaseous and particulates — frequently occur together. Paint spraying operations, for example, produce both paint mist (particulate) and solvent vapors (gaseous).

3. Oxygen Deficient Atmosphere

This condition is most commonly found in confined spaces with very poor ventilation. Examples are silos, petrochemical tanks, and the holds of ships. (In some situations an oxygen deficient atmosphere is purposely maintained. For instance, fruit is sometimes kept in warehouses with a lot of carbon dioxide and very little oxygen.) Oxygen deficient atmospheres occur in two different ways.

- a. Oxygen is "used up" by a chemical reaction in which it is combined with other elements. This is what happens when fire burns or iron rusts.
- b. Oxygen is "pushed out" by another gas. If a room with "normal" air (which contains about 21% oxygen) fills up with another gas, e.g., helium, there will be less oxygen in every breath you take because the oxygen is being steadily "displaced" by the helium.

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I. RESPIRATORY PROTECTIVE EQUIPMENT SELECTION

The selection of the proper respiratory protective equipment involves, for the most part, three basic steps:

- Identification of the hazard;
- Evaluation of the hazard; and
- Selection of the proper respiratory protective equipment.

A. IDENTIFICATION OF THE HAZARD

Hazards may take many different forms. Since the selection of a respirator is based on the specific hazards to which you are exposed, JUST ANY RESPIRATOR WON'T DO. It is important to know something about the different kinds of hazardous materials which may exist within your facility requiring the use of respirators.

1. Gaseous Contaminants

Gaseous contaminants add another invisible material to the air we already breathe. There are two types of gaseous contaminants:

- a. Gases include substances, e.g., carbon dioxide, which are solids or liquids only at very low temperatures and/or high pressures. Carbon dioxide is a gas at room temperature, but it also occurs as a solid, dry ice at low temperatures, and as a liquid in pressurized tanks.
- b. Vapors are exactly like gases except that they are formed by evaporation of substances, such as acetone or trichloroethylene, which ordinarily exist as liquids.

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Oxygen deficient atmospheres have been classified as immediately dangerous to life. Typical early symptoms are dizziness and euphoria — like being slightly drunk. Lack of oxygen affects the brain very quickly, so you might not be aware of what is wrong until you are too confused to escape. Oxygen starvation can cause serious injury to the brain.

4. *Atmospheres Immediately Dangerous to Life or Health*

This is a term which is used to describe very hazardous atmospheres in which exposure will:

- Cause serious injury or death within a matter of minutes. Examples are exposure to high concentrations of carbon monoxide or hydrogen sulfide.
- Cause serious delayed effects. Exposure to critical levels of radioactive materials or cancer-causing agents are examples.

B. EVALUATION OF THE HAZARD

Once a potential hazard has been recognized and the hazardous substance or particulate identified, it is then necessary to determine the amount of contaminant (concentration) present. The measured concentration can be stated in various "units," depending on the form of the contaminant. The two most widely used units are (1) mg/M³ — milligrams of contaminant in air per cubic meter of air and (2) ppm — parts of contaminant in air per million parts of air. The measured concentration (in appropriate units) is then compared with either the permissible exposure level (PEL), mandated in OSHA regulations, or the threshold limit value (TLV), recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). These values, as determined by these groups, are the maximum concentration to which a worker may be exposed day after day without adverse effects. It is your employer's responsibility to determine the concentration of the contaminant you are exposed to.

C. SELECTION OF THE RESPIRATORY PROTECTIVE EQUIPMENT

After the hazard(s) has been recognized and measured, the other factors still need to be considered.

- Is the contaminant recognized the *only* contaminant present?
- Does the contaminant have adequate warning properties? (Warning properties are especially important when *air-purifying* respirators are used against gases and vapors.)
- Will the contaminant irritate the eyes at the estimated concentration to which the user will be subjected?
- Can the contaminant be absorbed through the skin? If it can, will it result in a serious injury?

Now the proper respirator can be chosen.

What types are available?

1. *Respirator types:*

Respiratory protective devices can be divided into two general categories:

- Air-purifying respirators**
These devices remove the contaminant from the breathing air before it is inhaled. For each model of air-purifying respirator, there are usually many air-purifying filters available for protection against specific contaminants. These filters fall into two subgroups: particulate removing filters and vapor and gas removing filters called cartridges or canisters. These are discussed in Appendices I and II. Combination filters for protection against both particulates and organic vapors are also available.
- Atmosphere Supplying Respirators**
These devices supply uncontaminated breathing air to the user from a source other than the surrounding atmosphere. These types are usually complex and come in many configurations.

II. MEDICAL ASPECTS OF RESPIRATORY PROTECTIVE EQUIPMENT

The use of any type of respirator imposes some physiological stress on the user. *Air-purifying respirators*, for example, make breathing more difficult because the filter or cartridge can reduce the flow of air. The special exhalation valve on an *open circuit pressure demand* SCAB requires you to exhale against resistance. The bulk and weight of an SCBA can be a burden. If you are using an *airline respirator*, you might have to drag up to 300 feet of hose around. All of these factors can increase the "total" workload. If you have lung or heart problems, wearing a respirator could present an unacceptable risk. You should have some type of medical examination to determine if you are able to wear a respirator without it affecting your health.

A medical examination by a physician is the preferred screening mechanism. The following conditions may affect your ability to wear a respirator, and if they exist, you should get a medical opinion.

- Lung
 1. Do you have a history of asthma or emphysema?
 2. Do you have difficulty in breathing?
 3. Do you have any documented lung problems?
- Heart
 1. Do you have high blood pressure?
 2. Do you have artery diseases?
 3. Do you have documented heart problems?
- Other
 1. Do you have missing or arthritic fingers?
 2. Do you have facial scars?
 3. Do you have claustrophobia?

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Atmosphere Supplying Respirators can be broken down into two subgroups.

Air Respirators, in which breathable air is conveyed to the user via a compressed air line or hose, and Self-contained Breathing Apparatus (SCBA), in which the user carries the breathing air sources which can be a compressed air tank or an oxygen generating device. See Appendices III and IV.

2. Selection Procedures

Selecting the proper respirator must be based on the hazard present, its concentration, and the form of the hazard (vapor, particulate, etc.).

3. Approved Respiratory Protective Equipment

OSHA requires that *approved* respirators be used if they are available. If only one brand of respirator on the market is approved for a particular hazard, then that brand is considered to be "available" and must be used.

An approved respirator is one that has been tested and found to meet minimum performance standards by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA). An approved respirator (by NIOSH) contains the following:

- An assigned identification number placed on each unit, e.g., TC-21C-101. The TC designation will always precede the identification number.
- A label identifying the type of hazard the respirator is approved to protect against.
- Additional information on the label which indicates limitations and identifies the component parts approved for use with the basic unit.



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III. PROPER FITTING OF RESPIRATORY PROTECTIVE EQUIPMENT

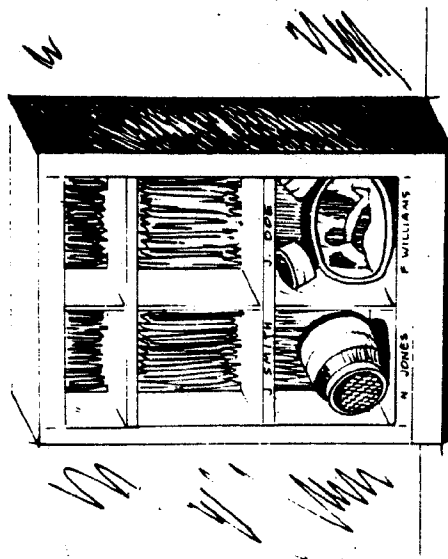
Once a respirator has been selected for the contaminant to which you are exposed, and is appropriate for the airborne concentration, you are fully protected, right? Wrong! A respirator won't protect you unless the air you breathe goes through the "business end" — the canister, filter, or air supply system. If the face seal isn't tight or the connections are loose you may think you're breathing through it, but you will actually be breathing *around* it.

You may have to try on several different respirators before you find the one that fits properly. Your employer should have several types of respirators to choose from. Your employer must show you how to put the respirator on and how to adjust the straps for the best fit. The respirator should fit snugly, but it should not leave red marks, deep indentations on your face, or make it difficult to turn your head.

Beards and bushy sideburns may have to go, since respirator facepieces won't seal over them. Similarly, gum and tobacco chewing cannot be allowed since excess facial movement can break the face seal.

If you wear prescription glasses, you must wear a respirator facepiece which will accommodate the glasses (this is especially critical for full facepiece respirators). Contact lenses should not be worn while wearing a respirator. A properly fitted respirator — primarily a full facepiece respirator — will stretch the skin at the temples slightly so that the contact lens might pop out. Also, contaminants that do leak in around the sealing surface may get underneath the contact lens thus causing severe discomfort. Your first reaction would be to remove the facepiece to remedy the situation — which would be fatal in a lethal environment.

Two types of fitting tests are used to determine the proper fit of respiratory protective equipment: qualitative tests and quantitative tests. *Qualitative* tests are fast, usually simple, but not as accurate an indicator for improper fit as the quantitative test. The *quantitative* test, though more accurate, requires the purchase of expensive equipment, requires a specially trained operator, and is of limited use due to its complexity and bulk.



B. INSPECTION

Inspection of the respirator is an important part of usage. You can further safeguard your health by performing (as appropriate) the below listed checks.

1. Disposable respirators, check for:

- Integrity of the filter (for holes);
- Straps for elasticity and deterioration;
- Metal nose clip for deterioration (if applicable).

2. Air-purifying respirators (quarter-mask, half-mask, full-facepiece, and gas mask):

- a. Rubber Facepiece, check for:
 - excessive dirt;
 - cracks, tears, or holes;
 - distortion from improper storage;
 - cracked, scratched or loose fitting lens (full-facepiece);
 - broken or missing mounting clips.

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IV. MAINTENANCE OF RESPIRATORY PROTECTIVE EQUIPMENT

If you wear a respirator routinely it should be cleaned, inspected, and stored in a convenient location *after each use*.

A. CLEANING AND STORAGE

At the end of the workshift the respirator should be cleaned and stored in a convenient, clean location. If the respirator is shared, it should be cleaned *and* disinfected between users. In a large respirator program there may be a central facility for cleaning. In a small program, you may be expected to clean your own respirator. If so, the following method may be used.

- Wash with a detergent or a combination detergent and disinfectant, in warm water using a brush.
- Rinse in clean water, or rinse once with a disinfectant and once with clean water. (The clean water rinse is particularly important because traces of detergent or disinfectant left on the mask can cause skin irritation or dermatitis.)
- Dry on a rack or hang from a clothes line. In either case position the respirator so that the facepiece rubber won't "set" crooked as it dries.

Proper storage of a respirator is very important. The law requires that respirators be protected from dust, sunlight, heat, extreme cold, excessive moisture, and damaging or contaminating chemicals. A storage cabinet for air-purifying respiratory protective equipment is shown below.

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- c. Air Supply System, check for:
 - Breaks or kinks in air supply hoses and end fitting attachments;
 - Tightness of connections;
 - Proper setting of regulators and valves (consult manufacturer recommendations);
 - Correct operation of air purifying elements and carbon monoxide or high-temperature alarms.
- d. Self-contained Breathing Apparatus (SCBA):
 - Consult manufacturer's literature.

If defects are observed in a respirator, it must be removed from use until adequately repaired, or it must be replaced.

C. REPAIR

Sooner or later your respirator will need a new part or some other repair. The law requires that the people who repair respirators be well trained. And it is important for everyone to realize that respirator parts from different manufacturers are not interchangeable. The NIOSH approval will not hold if an air hose or a gasket or any other part has been replaced by one from a different brand of respirator. This is true even if the respirator seems to work just as well with the substitute part.

- b. Headstraps, check for:
 - breaks;
 - loss of elasticity;
 - broken or malfunctioning buckles or attachments;
 - excessively worn serrations of the head harness which might allow the facepiece to slip (full-facepiece only).
- c. Inhalation Valve, Exhalation Valve, check for:
 - Detergent residue, dust particles, or dirt on valve or valve seat;
 - Cracks, tears, or distortion in the valve material, or valve seat;
 - Missing or defective valve cover.
- d. Filter Element(s), check for:
 - Proper filter for the hazard;
 - Approval designation;
 - Missing or worn gaskets;
 - Worn threads — both filter threads and facepiece threads;
 - Cracks or dents in filter housing;
 - Deterioration of harness (gas mask canister);
 - Service life indicator, or end of service date — for expiration (gas mask).
- e. Corrugated Breathing Tube (gas masks), check for:
 - Cracks;
 - Missing or loose hose clamps;
 - Broken or missing connectors.

3. Atmosphere-Supplying Respirators

- a. Check facepiece, headstraps, valves, and breathing tube as discussed previously.
- b. Hood, Helmet, Blouse, or Full Suit (if applicable), check for:
 - Rips and torn seams;
 - Headgear suspension;
 - Cracks or breaks in faceshield;
 - Protective screen to see that it is intact and fits correctly over the faceshield (abrasive blasting hoods and blouses).

V. EMPLOYEE RESPONSIBILITIES

As a user of respiratory protective equipment, you also have responsibilities.

- Use respiratory protective equipment as instructed.
- Guard against damaging the respirator.
- Go immediately to an area of "clean" air if your respirator malfunctions.
- Report any malfunctioning of respiratory protective equipment to your supervisor. This would include but not be limited to:
 - Discomfort;
 - Resistance to breathing;
 - Fatigue due to respirator usage;
 - Interference with vision or communication;
 - Restriction of movement.

It is impossible to cover briefly all the considerations that you should be familiar with because of the many types of respirators available. The manufacturer can supply much of the needed information. However, to be of value, it must be fully read and applied.

The appendices in this guide provide specific information on the general types of respirators most commonly in use. They are not all-inclusive, but do provide the basic information an employee should know about his particular respirator.

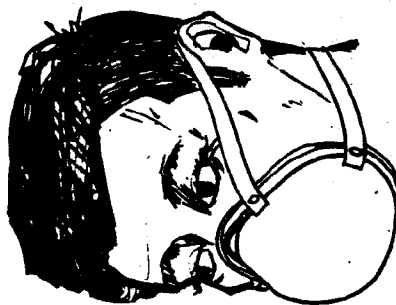
APPENDIX I

AIR-PURIFYING, PARTICULATE-REMOVING FILTER RESPIRATORS

A. DESCRIPTION

These are generally called "dust," "mist," or "fume" respirators, and by a "filtering" action remove particulates before they can be inhaled.

1. *Single-use, dust*



Side view showing proper position of straps

The single-use respirator is a respirator which is completely disposed of after use. They are for individual use and should be discarded when resistance becomes excessive or the respirator is damaged. Generally, these respirators are approved only for pneumoconiosis- or fibrosis-producing dust such as coal dust, silica dust, and asbestos.

2. Quarter-mask, dust and mist, and half-mask, dust and mist

The quarter-mask covers the mouth and nose; the half-mask fits over the nose and *under the chin*. The half-mask usually produces a better facepiece-to-face seal than does the quarter-mask and is therefore preferred for use against more toxic dusts and mists.

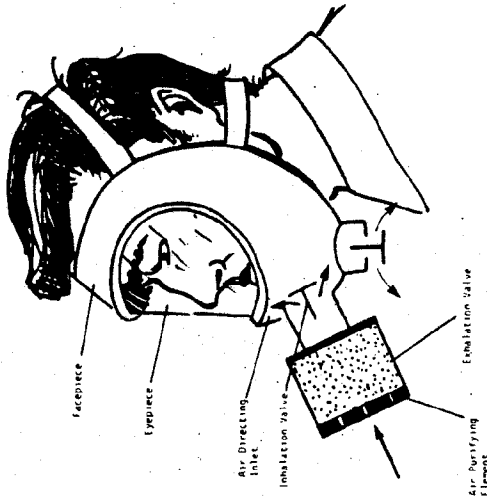
These dust and mist respirators are designed for protection against dusts and mists whose TLV is greater than .05 mg/M³ or 2 mppcf.

3. Half-mask, high efficiency

This mask uses a high efficiency filter. Because of this high efficiency filter, this respirator can be used in atmospheres containing dusts, mists, fumes, or combinations of these forms where the TLV is less than .05 mg/M³ or 2 mppcf.

4. Full facepiece

Full facepiece respirators cover the face from the hairline to below the chin. In addition to providing more protection to the face, the full facepiece gives a better seal than do the half- or quarter-masks. These respirators provide protection against dusts, mists, fumes, or any combination of these contaminants depending upon the type of filter used.



Typical full facepiece respirator.

B. LIMITATIONS

- Air-purifying respirators do *not* provide oxygen, so they must *never be worn in oxygen-deficient atmospheres*.
- Particulate-removing air-purifying respirators offer *no* protection against atmospheres containing contaminant gases or vapors.
- These respirator types should not be used for abrasive blasting operations.

C. PROBLEMS

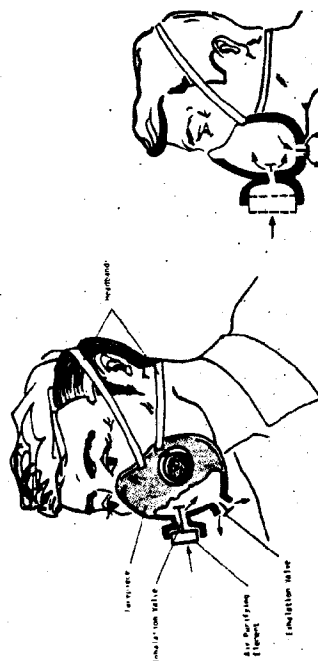
- The air flow resistance of a particulate-removing respirator filter element increases as the quantity of particles it retains increases, thus increasing the breathing resistance. *As a rule of thumb*, when comfortable breathing is impaired because of dust build-up, the filter should be replaced.
- Performance of some filter materials is affected by open storage in very humid atmospheres. Care should be taken in storing filter elements.

APPENDIX II

AIR-PURIFYING, CHEMICAL CARTRIDGE AND CANISTER RESPIRATORS FOR GASES AND VAPORS

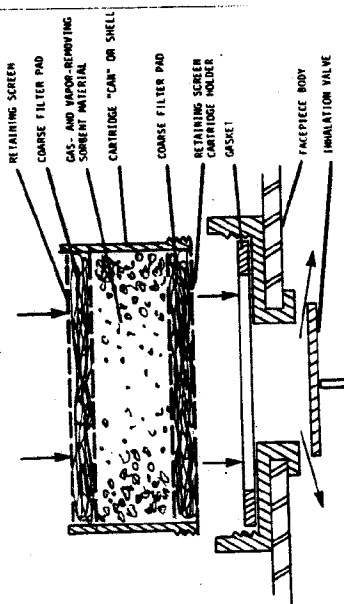
A. DESCRIPTION

Vapor and gas-removing respirators use cartridges or canisters containing chemicals to trap or react with specific vapors and gases and remove them from the air breathed. The basic difference between a cartridge and a canister is the volume of the sorbent. Generally, a "cartridge" refers to a chemical filtering element which attaches directly to the facepiece, whereas a "canister" refers to the chemical filter element held in a harness and which is connected to the facepiece via a corrugated breathing tube. Some typical cartridge and canister respirators are shown below.



Typical half-mask respirator. Typical quarter-mask respirator.

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Typical chemical cartridge.

1. Half-mask and Quarter-mask Chemical Cartridge or Canister Respirators

These are available for protection against single chemicals such as ammonia or against entire classes such as organic vapors. Be sure to read the label on the cartridge or canister since it tells what the cartridge or canister protects against, the maximum concentration in which the element can be used, and in some instances, the service life or expiration date of the element.

2. Full facepiece

The full facepiece respirator may use a canister or cartridge(s) as the protective element. The front, back, and chin-mounted full-facepiece canister respirators are also referred to as "gas masks."

B. LIMITATIONS, CHEMICAL CARTRIDGE OR CANISTER

- These respirators do not supply oxygen, so they must *never be worn in oxygen deficient atmospheres.*
- They must not be used if the chemical to be protected against lacks adequate warning properties — odor, taste, or irritation, unless their use is permitted by applicable OSHA or MSHA standards. Warnings such as these are necessary to alert you that the sorbent is saturated, and the contaminant is passing through the cartridge or canister, and you are breathing contaminated air.

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- They must not be used in atmospheres immediately dangerous to life or health, except for escape.
- They provide protection only from the specific gases or vapors they were designed to protect against (they may be worthless for other gases or vapors).

APPENDIX III

ATMOSPHERE SUPPLYING RESPIRATORS — SUPPLIED-AIR

Atmosphere-supplying respirators, rather than removing the hazardous material from the air, exclude the workplace air altogether and provide clean air from an independent source. There are two kinds of atmosphere supplying respirators: a *supplied-air respirator* in which the user is supplied with respirable air through a hose, and a *self-contained respirator* in which the user carries a supply of respirable air.

A. DESCRIPTION — SUPPLIED-AIR RESPIRATOR

Supplied-air respirators use a central source of breathing air that is delivered to the wearer through an air supply line or hose. There are essentially two major groups of supplied-air respirators — the airline device and the hose mask with or without a blower.

1. Airline Devices

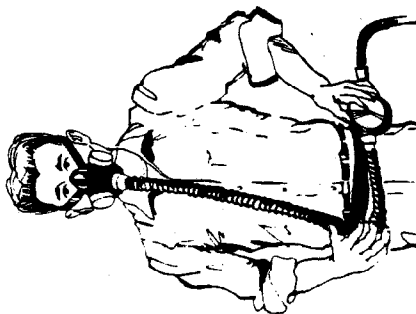
The distinction of airline devices is that they use a stationary source of compressed air delivered through a high-pressure hose. Airline devices can be equipped with half or full-face masks, helmets, or hoods, or the device can come as a complete suit. Airline respirators can be used for protection against either particulates, gases, or vapors. They provide a high degree of protection against these contaminants but they *cannot be used in at-*

mospheres immediately dangerous to life or health because the user is completely dependent on the integrity of the air supply hose and the air source. If something happens to either the hose or air supply, he may not be able to escape from the contaminated area fast enough without endangering his life.

A great advantage of the airline respirator is that it can be used for long continuous periods. There are three types of airline respirators.

a. Demand Airline Device

In a demand device, the air enters the facepiece only on "demand" of the wearer, i.e., when the person inhales. This is due to the nature of the valve and pressure regulator. An example of a demand, half-mask airline device is shown below.



During inhalation there is a negative pressure in the mask, so if there is leakage, contaminated air may enter the mask and be breathed by the user. The leakage problem is a major drawback of the demand device. Demand devices are also available with a full-face mask, which provides a better seal than does the half-mask.

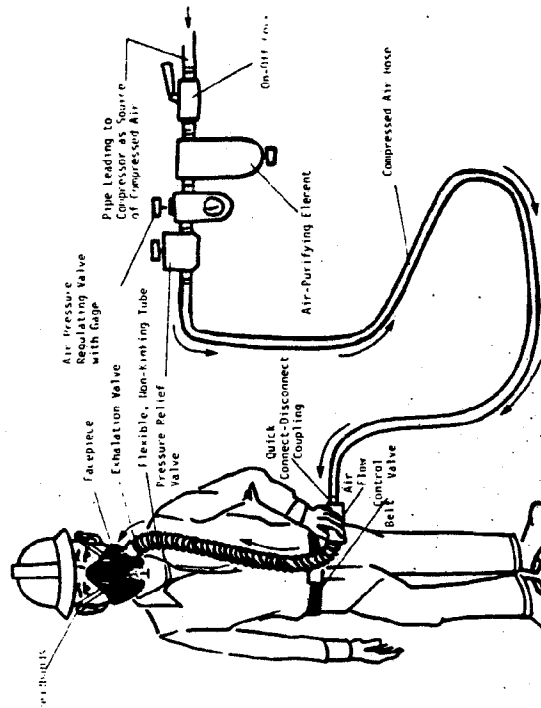
b. Pressure Demand Airline Devices

The pressure demand device has a regulator and valve design

such that there is a continuous flow (until a fixed static pressure is attained) of air into the facepiece at all times, regardless of the "demand" of the user. The airflow into the mask creates a positive pressure outward. As such, there is no problem of contaminant leakage into the facepiece. This is a significant advantage of this type of device.

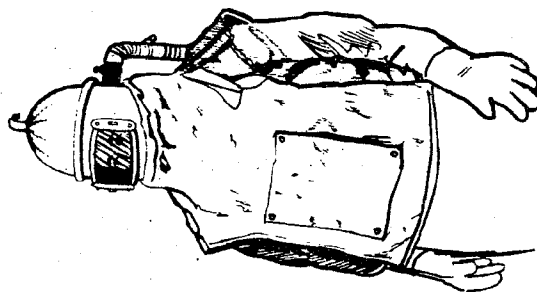
c. Continuous-flow Airline Device

The continuous-flow airline respirator maintains a constant airflow at all times and doesn't use a regulator, but uses an airflow control valve or orifice which regulates the flow of air. A continuous flow-full facepiece device is shown below.



The continuous-flow device creates a "positive" pressure in the facepiece, and as a result, does not have the problem of inward leakage of contaminant.

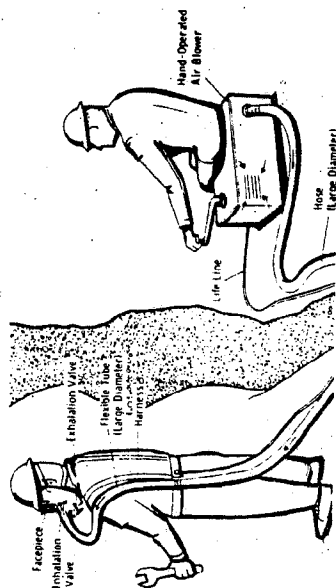
A special type of continuous-flow device that provides protection against flying particles of abrasive materials is also available. The abrasive blasting airline respirator, shown below, incorporates a loose fitting facepiece.



2. Hose Masks

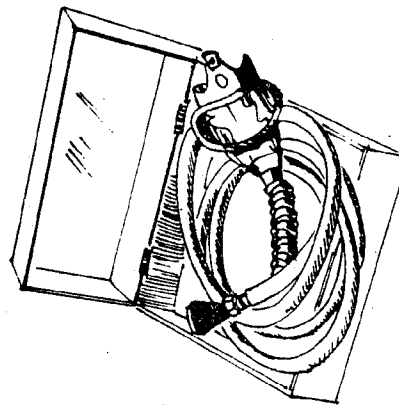
Hose masks supply air from an uncontaminated source through a strong, large diameter hose to the facepiece, and do *not* use compressed air or have any pressure regulating devices. (An advantage of the hose mask *with* a blower is its minimal resistance to breathing). Advantages of the hose mask *without* a blower are its theoretically long use periods and its simple construction, low bulk, easy maintenance, low initial cost, and minimal operating cost. Two types are available:

- Those masks with hand or motor operated air blowers have a full facepiece mask. The hose length can be up to 300 feet. It must not be used in atmospheres immediately dangerous to life or health.



Hose mask respirator with hand operated blower.

- Hose masks without blowers must have a tight fitting full facepiece. Helmets and hoods cannot be used. The hose mask without a blower can have up to 75 feet of hose.



Hose mask without Blower.

B. LIMITATIONS

1. Airline Devices

- a. These devices must not be used in atmospheres immediately dangerous to life or health since the user is dependent upon an air hose which, if cut, crushed, or damaged, leaves him with little or no protection.
- b. The trailing air supply hose of the airline respirator severely restricts the wearer's mobility. This may make the airline respirator unsuitable for those who must move frequently between widely separated work stations.

2. Hose Mask

- a. The hose mask with a blower cannot be used in atmospheres immediately dangerous to life or health because the low air volume flow may result in a negative pressure being produced in the mask during inhalation allowing contaminated air to leak into the mask. Also, if the air hose is cut or obstructed, the user will be unprotected.
- b. The trailing air supply hose of the hose mask severely limits mobility, so it may be unsuitable if frequent movement among separated work stations is required.
- c. A severe restriction of the hose mask without a blower is that it is limited to a maximum hose length of 75 feet. Also, it requires the wearer to inhale against the resistance to air flow offered by the air hose which may become significant during heavy work. Inhaling against this resistance may cause fatigue.

APPENDIX IV

ATMOSPHERE SUPPLYING RESPIRATORS — SELF-CONTAINED BREATHING APPARATUS (SCBA)

The self-contained breathing apparatus (SCBA) allows the user to carry a respirable breathing supply with him/her, and does not need a stationary air source such as a compressor to provide breathable air. The air supply may last from 3 minutes to 4 hours depending on the nature of the device.

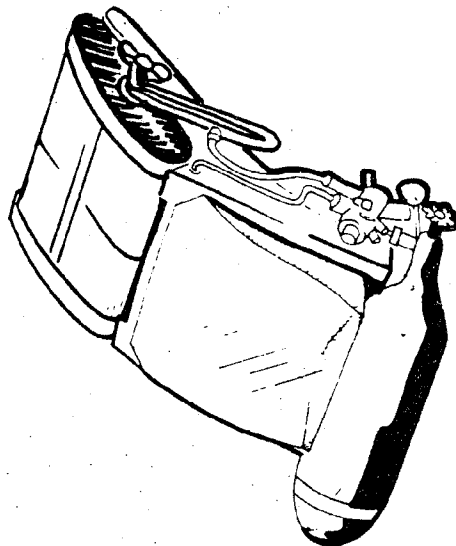
A. DESCRIPTION — SCBA

1. Closed Circuit SCBA

Another name for closed circuit SCBA is "rebreathing" device. The air is rebreathed after the exhaled carbon dioxide has been removed and the oxygen content restored by a compressed oxygen source or an oxygen-generating solid. These devices are designed primarily for 1-4 hour use in toxic atmospheres. Because negative pressure is created in the facepiece during inhalation, there is increased leakage potential. Therefore, the devices should be used in atmospheres immediately hazardous to life and health only when their long-term use is necessary, as in mine rescue. Two types of closed circuit SCBA are available.

a. Compressed Oxygen Cylinder Type

In this device, breathable air is supplied from an inflatable bag. Exhaled air from the wearer is filtered to remove carbon dioxide and the oxygen consumed is replenished from an oxygen cylinder.



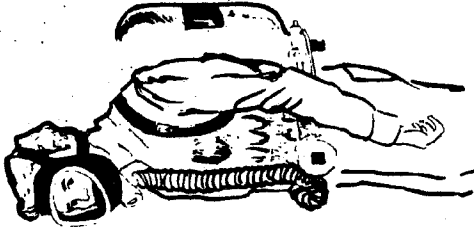
Typical oxygen-supplying closed circuit SCBA.

2. Open Circuit SCBA

An open circuit SCBA exhausts the exhaled air to the atmosphere instead of recirculating it. A tank of compressed air carried on the back, supplies air via a regulator to the facepiece. Because there is no recirculation of air, the service life of the open circuit SCBA is shorter than a closed circuit system. Two types of open circuit SCBA are available, "demand" or "pressure demand."

a. Demand SCBA

In a demand SCBA, air flows into the facepiece only on "demand of the wearer," i.e., when the person inhales. This is due to the nature of the valves and pressure regulator. An example of a demand open circuit is shown below. During inhalation, there is a negative pressure in the mask, so if there is leakage, contaminated air can enter the mask and be breathed by the user. The leakage problem is a major drawback of the demand device. Because of this problem, a demand type open circuit SCBA should not be used in atmospheres immediately dangerous to life or health.



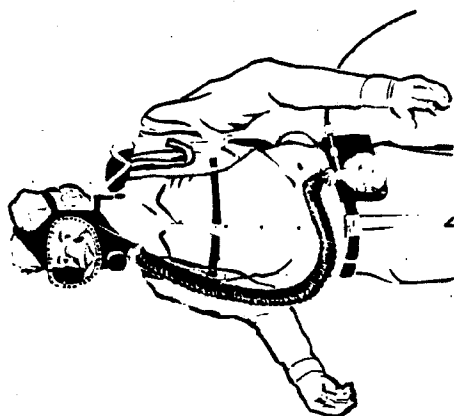
Typical open circuit SCBA.

b. Pressure Demand SCBA

The pressure demand open circuit SCBA has a regulator and valve design which maintains a positive pressure in the facepiece at all times regardless of the "demand" of the user. As such, there is no problem of contaminant leakage into the facepiece. This is a significant advantage of the pressure demand device. A pressure demand SCBA is identical in appearance to a demand SCBA, but has a different regulator assembly and facepiece exhalation valve design.

3. Combination Atmosphere Supplying Respirator: Supplied Air and SCBA

Designed primarily as a long duration device, this respirator combines an airline respirator with an auxiliary air supply (usually compressed air) to protect against the possible failure of the primary air supply (the airline). The additional supply can be provided for 15 minutes or even longer. The choice depends upon how long it would take to escape from the toxic atmosphere if the primary air supply failed.



Typical combination air line and SCBA respirator.

B. LIMITATIONS

- The air supply is limited to the amount in the cylinder (SCBA's using a compressed air tank) and therefore the respirator cannot be used for extended periods without recharging or replacing the cylinders.
- Because these respirators are bulky and heavy, they are often unsuitable for strenuous work or use in confined spaces.
- Because of the *short* service time of the auxiliary air supply, the escape portion of the combination unit can be used only for escape from atmospheres Immediately Hazardous to Life or Health (IDLH) unless the escape portion has a minimum of 15 minutes service life. Such devices can then be used for entry into immediately dangerous to life or health atmospheres, provided not more than 20% of the available breathing supply is used. These devices may always be used for entry into IDLH atmosphere when utilized with the external air supply.

RESPIRATOR MAINTENANCE

I. Program Elements

- A. Inspection for Defects
- B. Cleaning & Disinfecting
- C. Repair
- D. Storage

II. INSPECTION FOR DEFECTS

Inspect before and after each use.

- A. Check face piece for dirt, cuts, tears, holes, melting, stiffening, crushing, cracked lenses, incorrectly mounted lenses, or cartridge elements.
- B. Inspect headband for breaks, frays, tears, or loss of elasticity.
- C. Check for bent or missing hardware.
- D. Check exhalation system for proper function.
- E. Check for dust, dirt, cracks or tears in the valve flap or valve seat of the exhalation system.
- F. Check inhalation valves for rust and dirt. Check seats for cuts, cracks, and nicks. Inspect valve flaps for cuts or tears.
- G. Check cartridge threads for stripping; if worn replace. Look for cracks in the cartridge housing.
- H. If breathing resistance develops, change the filter.
- I. If contaminants are detected through the cartridge, replace the cartridge.
- J. Check canister's expiration date, discard if expired. Check for incorrect cartridge for the hazard or for incorrect installation of cartridge.

III. CLEANING AND DISINFECTING

Clean and disinfect respirators weekly.

- A. Remove the air purifying elements.
- B. Remove dirt and debris from face piece surface. Never use organic solvents to accomplish this.
- C. Wash respirator in warm water using a detergent. Scrub with a soft brush if necessary.
- D. A reliable disinfectant such as chlorine bleach should be used with water to remove any bacteria. Use a solution of 5ml of household bleach in 1 gal of water. Immerse the respirator in this solution for at least 2 min.
- E. Rinse respirator in clean, warm water.
- F. Allow respirator to air dry on a clean surface.

IV. REPAIRS

- A. Respirators which need repairs should be discarded and replaced with new ones.

V. STORAGE

- A. Protect respirator from heat, cold, dust, sunlight, and chemicals.
- B. Place the freshly cleaned and disinfected respirator in a plastic bag ("Baggie") until ready for reuse.
- C. Store respirators in a single layer in their normal position.

SELF-CONTAINED BREATHING APPARATUS

MONTHLY CHECKLIST

INSPECTION INSTRUCTIONS

Date

	Mask - deterioration or distortion		Side Strap
	Breathing Tube		Control Lever
	Chest Buckle		Locking Tab
	Quick Connect Coupling		Regulator Hose Coupling
	Regulator		Cylinder Pressure Gauge
	Waist Belt		Clamping Lever
	Shoulder Strap		Cylinder and Valve Assembly
	Regulator Pressure Gauge		Cylinder Valve Knob
	By-Pass Valve		Cleanliness Of Unit
	Shut-Off Valve		Carrying Case

Preparation For Use

1. Check cylinder pressure gauge for "full" indication. If pressure indicated is below "full", recharge cylinder or replace with fully charged cylinder.
2. Check that regulator shut-off valves are in closed position.
3. Check all strapping, both rubber and fabric, for signs of wear or deterioration. Mask straps should be stretched slightly to check for rubber decay.

Signed

Date

McK00193

McKesson

Operations

Section	Reference	Page	End
GENERAL SAFETY	10.90	1	
Subject	Issue Date	Effective Date	
SERVICE CENTER SAFETY AND COMPLIANCE REVIEW	9/15/85	9/15/85	

GENERAL

Safety in McKesson Chemical has been defined as the necessary level of discipline in the work place to protect the worker from injuries and undesirable health conditions, assure quality, prevent losses to machinery and equipment, diminish or delete liabilities, reduce insurance premiums, comply with government regulations, and protect customers and the public.

To assure that a strong positive effort is directed toward fulfilling the above objectives, a Safety and Compliance Review shall be conducted quarterly at each Chemical Group facility. Two reviews each year should be conducted by the appropriate Area Operations Manager, one by the appropriate Regional Operations Manager, and one by a delegate. The Area Operations Manager will coordinate Service Center Reviews for his Area.

The Review is designed to assist the facility manager in developing and maintaining the high standards necessary to achieve the above objectives. The Review is a team effort and is always performed in a constructive manner, recognizing the myriad of tasks normally associated with managing a facility.

The Area Director, with the assistance of the facility Operations Manager and the Area Operations Manager, is responsible for making corrections as required. Regional and/or Home Office staff may also be called upon for assistance as necessary. It is the responsibility of the Area Director, through the facility and Area Operations Managers, to maintain the standards required to fulfill the above objectives.

REVIEW

The form used for the Safety and Compliance Review (Exhibit 1) has been revised to emphasize items which have a greater impact on the safe operation of the facility. The form is intended to be used for all four Reviews in a year. In this way, changes in the status of an item can be tracked.

McKesson Operations

Section	Reference	Page	End
GENERAL SAFETY	10.90	2	
Subject	Issue Date	Effective Date	
SERVICE CENTER SAFETY AND COMPLIANCE REVIEW	9/15/85	9/15/85	

REVIEW (Cont.)

The Action Report in Exhibit 2 is designed to summarize the Review items needing attention. The Action Report is a courtesy to the managers.

The Review form itself is divided into nine sections as follows:

Section I - Office and Documentation

This section is designed to review recordkeeping, training, documentation, procedures, etc., as well as all of those activities which on a short inspection would not normally be expected to be observed as they occur, i.e., safety meetings, emergency response, etc.

Section II - Warehouse

This section covers the Warehouse and Dock areas. This requires an actual visual inspection. Some items, such as inspection of fire extinguishers, housekeeping, electrical outlets, etc., which are listed in this area should be kept in mind when reviewing the yard and repack facilities since there is an effort to avoid repetition in the sections.

Section III - Transportation

This section inspects the vehicles on site during the Review and requires a visual inspection.

Section IV - Hazardous Waste

This section reviews the storage of hazardous waste at facilities permitted to do so. A visual inspection is required.

Section V - Liquid Repack at Yard

This section covers the physical area and equipment devoted to Liquid Repack and requires a visual on-site inspection.

Section	Reference	Page	End
GENERAL SAFETY	10.90	3	
Subject	Issue Date	Effective Date	
SERVICE CENTER SAFETY AND COMPLIANCE REVIEW	9/15/85	9/15/85	

REVIEW
(Cont.)

Section VI - Dry Repack

This section covers the physical area and equipment devoted to the dry repacking and requires a visual on-site inspection.

Section VII - Laboratories

This section is to be used wherever a laboratory facility is in place, regardless of the size and scope. A lab facility, for purposes of this Review, is considered to be one housed in a separate room(s) and containing laboratory equipment sufficiently sophisticated so as to require a trained operator or technician.

Section VIII - Compressed Gas Repack

This section is to be used for those facilities that repack chlorine, anhydrous ammonia, or sulfur dioxide and covers the physical area and equipment devoted to the compressed gas repacking and requires a visual on-site inspection.

Section IX - Bulk Chlorine Facilities

This section covers facilities that transport chlorine in bulk. It requires a visual inspection.

INSTRUC-
TIONS

1. Review forms as specified in Exhibit 1 will be used at each facility.
2. Review forms will be periodically updated based on field experience, new regulations and oversights.
3. Additional items should be written on Review form where need is indicated. For example, additional items may be needed where:
 - a. A truck maintenance shop is located.
 - b. Unusual water treatment facilities are located.

McKesson
Operations

Section	Reference	Page	End
GENERAL SAFETY	10.90	4	X
Subject	Issue Date	Effective Date	
SERVICE CENTER SAFETY AND COMPLIANCE REVIEW	9/15/85	9/15/85	

INSTRUC-
TIONS

- c. Unusual equipment is used, e.g., sand blasters.
 - d. Water wells or septic tanks are used.
 - e. Local government criteria involves different conditions.
 - f. The Review needs to be made more responsive and meaningful.
4. Indicate by check (✓) mark in proper column relative performance of each item.
 5. N/A designates non-applicability.
 6. Many items require probing questions.
 7. Each item checked as "Needs Improvement" must be commented on at the bottom of the page.
(Cross-reference comments to number.)
 8. Reviews are to be discussed with local managers promptly upon completion.
 9. Complete the Action Report to summarize the Review for management.
 10. Each audit is to be conducted in a positive, constructive manner, with the common goal of assisting the facility to achieve those standards necessary to meet the objectives stated at the beginning of each Review form.

1ST 2ND 3RD 4TH
 QUARTER QUARTER QUARTER QUARTER

QUARTERLY SAFETY & COMPLIANCE
 REVIEW

LOCATION _____

I. OFFICE & DOCUMENTATION

A. General

1. ONE PERSON CLEARLY IN
 CHARGE OF SAFETY AND
 HEALTH ACTIVITIES.

NAME _____

2. Company rules, general safety policy, state or federal posters as required, and diagram of fire extinguisher locations and evacuation routes prominently displayed where all employees are likely to see them.
3. Current emergency telephone numbers posted by each phone.

BY	BY	BY	BY
_____	_____	_____	_____
Date: _____	Date: _____	Date: _____	Date: _____
AUDIT RESULTS NI:Needs Improvement FAV:Favorable			
NI FAV	NI FAV	NI FAV	NI FAV
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

A. General (Cont.)

4. Halon-type fire extinguisher in office.

B. Emergency Preparations

5. Spill control procedures on hand and training documented.
6. Emergency drills conducted semi-annually (at least) and documented.

Date of last drill:

C. Fire Protection

7. Local fire department familiar with facility and products stored. Visit documented.

Date of last visit:

8. (Reserved)

9. Personnel trained and documented in the use of fire extinguishers and fire planning annually.

Date of last training:

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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---	---	---	---
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

D. Safety

10. SAFETY COMMITTEE
DESIGNATED, MEETINGS
MONTHLY AND DOCUMENTED.
11. OFFICE WORK AREAS FREE
OF FIRE AND SAFETY
HAZARDS.
12. A nearby hospital,
 clinic, or infirmary for
 medical care designated
 for emergency use.
 Name _____
13. One or more employees
 trained in first aid.
 One on premises.
 Name(s) _____
14. Hazard Communications
 Orientation Conducted.
 Date of Initial
 Orientation: _____
 Date of last
 followup: _____
15. ALL ACCIDENTS
INVESTIGATED: REMEDIAL
ACTION PROPOSED AND
REPORTED AS PER
OPERATIONS MANUAL.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

E. Training

16. Defensive Driving classes conducted annually and documented for all drivers of Company vehicles.
17. Check rides conducted annually and documented for all drivers of Company vehicles.
18. Forklift operators trained and issued Operator's Certificates (OSHA).
19. Personnel trained annually and documented in the use of respirators (OSHA).

F. Regulatory

20. Current Material Safety Data Sheets accessible for all products stored by the service center. Distribution documentation current and signed B/L filed. Hazard Communications Program available.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

F. Regulatory (Cont.)

21. Reports of security, insurance, government, etc., inspections available; positive action taken where needed.
22. Drivers' DOT qualification files current.
23. OSHA Form 200 (Workplace Injury and Illness Record) kept current within 6 days.
24. OSHA record retention in compliance.
25. DOT exemptions on file for any exemption containers shipped by the service center; noted on B/L.
26. Neutralization pit disposal records properly recorded and maintained.
27. Repack instruction sheets with job tickets signed by operator & supervisor.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

G. Maintenance & Security

28. Annual written certification from an outside electrician that the grounding system has 50 OHMS resistance (max) and is adequate for Class I Group D flammable areas.

Last Date: _____

29. Perimeter locks conform to Operations Manual (Section 60.01); access to keys restricted; changed as appropriate and documented.

30. Keys to vehicles, alarm systems, perimeter locks, etc., issued against receipts and duplicates secured in a locked cabinet, desk or box.

31. Intrusion alarms tested at least monthly and documented.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

I. OFFICE & DOCUMENTATION
 (Cont.)

G. Maintenance & Security
 (Cont.)

- 32. Written procedures on hand and readily available to all personnel for all repack processes including bulk loading and unloading, washing, drumming, bagging, etc.
- 33. Driver's logs and driver's daily reports prepared as per procedure. Logs forwarded to Area monthly.
- 34. McKesson Tachograph Program in place and conducted properly.
- 35. First aid kits fully stocked, inspected monthly and documented.
- 36. EMERGENCY RESPONSE EQUIPMENT MAINTAINED, SEGREGATED, SEALED, INSPECTED MONTHLY AND DOCUMENTED.
- 37. Preventative Maint. Program in place, responsibilities assigned, actions.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
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— —	— —	— —	— —
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— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

G. Maintenance & Security
(Cont.)

- | Standards | | | |
|-----------|--------|--------|--------|
| NI FAV | NI FAV | NI FAV | NI FAV |
| --- | --- | --- | --- |

1st Quarter:

2nd Quarter: _____

3rd Quarter:

4th Quarter:

II. WAREHOUSE

A. General

- 39. McKesson compatibility storage and coding program posted with coding manual kept current with inserts from Operations Manual (Section 40.01).
- 40. Switches and switch panels unobstructed and clearly marked indicating voltage/function.
- 41. All exits unobstructed and marked with a properly illuminated sign kept unlocked while personnel are at work.
- 42. Balcony/mezzanine used for storage marked as to load capacity - has rails and toeboard (OSHA).
- 43. No evidence of poor sanitation - bird or rodent droppings.
- 44. INVENTORY STACKED SAFELY AND NEATLY 4" FROM WALLS, NO EVIDENCE OF LEAKING BAGS OR SPILLS.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

II. WAREHOUSE (Cont.)

A. General (Cont.)

45. USP, NF, FCC, AND FOOD
 GRADE MATERIALS STORED
 ON CLEAN, DEDICATED
 PALLETS, AND SEGREGATED.

46. Pallet racks properly
 utilized and in compli-
 ance with compatibility
 storage procedures.

B. Fire Protection

47. FORKLIFTS EQUIPPED WITH
 FULLY CHARGED AND
 SECURED FIRE
 EXTINGUISHERS.

48. Fire extinguishers
 mounted in readily
 accessible locations
 within 50 ft of each
 other; Type 30# BC or
 ABC.

49. Fire extinguishers
 tagged showing annual
 recharge date and
 initialed with monthly
 inspections.

50. Fire extinguishers and
 fire hoses unobstructed
 for access.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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---	---	---	---
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

II. WAREHOUSE (Cont.)

B. Fire Protection (Cont.)

51. A minimum 18" clearance is maintained below sprinkler heads.

C. Dock

52. WHEEL CHOCKS AVAILABLE AND USED: SIGNS POSTED AT LOADING DOCK(S).
53. DISCONNECTED TRAILERS CHOCKED AND SUPPORTED DURING LOADING OR UNLOADING.
54. Truck/rail dock plates kept in serviceable condition and secured to prevent slipping when in use.
55. Safety shower/eye wash (if any on dock) functioning and unobstructed.
56. Loaded material on trailers/straight trucks properly secured with hazardous materials accessible.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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---	---	---	---
---	---	---	---

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

II. WAREHOUSE (Cont.)

C. Dock (Cont.)

- 57. Loaded trailers/straight trucks properly display UN hazard class numbers and placards when required.
- 58. EYE PROTECTION PROGRAM IN PLACE, ENFORCED.
- 59. Current Material Safety Data Sheets for hazardous chemicals accessible. Hazard Communications Program available.
- 60. (RESERVED)
- 61. (RESERVED)

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

III. TRANSPORTATION

- 62. DELIVERY EQUIPMENT PRESENTS A POSITIVE COMPANY IMAGE. ID NUMBERS AND DECALS IN PLACE.
- 63. CHEMTREC number posted on dash or inside door, and on exterior.
- 64. Emergency equipment: warning devices, flashers, fuses, min. 10 lb BC extinguisher in place.
- 65. Tachographs and speedometer on all power units functioning.
- 66. Trailer and truck boxes, side racks in good repair; Floor Condition: mud guards, placard holders, etc., in place.
- 67. Lights and glass uncracked, no body or running gear defects.
- 68. Lift gates are in a safe operable condition.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
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— — —	— — —	— — —	— — —
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— — —	— — —	— — —	— — —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

II. TRANSPORTATION (Cont.)

69. T/T hoses and discharge valves capped or plugged. Internal valves and emergency shutoffs operable without leakage.
70. Bulk delivery equipment and portable tanks show DOT test and test-due dates.
71. TIRES MEET MINIMUM TREAD DEPTHS - ANY PORTION (FRONT 1/8", REAR 1/16"). TIRES MATCHED BY TYPE (RADIALS W/RADIALS).
72. All vehicles secured overnight to protect both contents and equipment.
73. Current Material Safety Data Sheets for hazardous chemicals accessible. Hazard Communications Program available.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES

A. Records and Documentation

- 74. Required permits and state and federal reports current and on file.
- 75. Handling/Adm. Procedures Booklet on hand.
- 76. Emergency/contingency plans up-to-date. Receipts available showing plan submitted to local emergency service organizations.
- 77. Inventory records current on all receipts and shipment of wastes for storage.
- 78. Operational Log & required inspections current for waste storage functions.
- 79. Personnel training records and assignments current on appropriate employees for waste storage functions.
- 80. Manifest file review: (Note any lacking items on any manifest and manifest sets.)

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES
 (Cont.)

A. Records and Documentation
 (Cont.)

- a. Generator name,
address & phone
number.
- b. EPA I.D. number;
handwritten
signature.
- c. Transporter(s) name,
address, and phone
number.
- d. Transporter(s) EPA
I.D. number;
handwritten
signature.
- e. Designated T/S/D
facility name,
address, and phone
number.
- f. T/S/D's EPA I.D.
number.
- g. Name, type, and
quantity of
hazardous waste
being shipped;
proper DOT
descriptions,
hazards class, & UN
number.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES

A. Records and Documentation
 (Cont.)

h. Special handling instructions or authorization number if required by State.

i. Full waste stream analysis.

j. Consolidation manifest for our shipping from storage to disposal facility.

B. Storage

Storage Inspection
 Checklist: (Note any item NOT present or not being done properly.)

81. a. Waste analyses on hand for all streams accepted.

b. Full logging procedure followed for all waste material accepted.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
---	---	---	---
---	---	---	---
---	---	---	---
---	---	---	---
---	---	---	---

COMMENTS:

1st Quarter: _____
 2nd Quarter: _____
 3rd Quarter: _____
 4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES
 (Cont.)

B. Storage (Cont.)

82. a. Does the storage facility have records of daily inspection?
- b. Are all containers securely closed and in the proper waste storage area?
- c. Are wastes segregated by type?
- d. Are all hazardous waste labels clearly visible?
 No previous labels visible?
- e. Are all waste containers stored with access for daily inspection of each for leakage?
- f. Is the number of containers less than or equal to the number stated on the location's permit/closure plan?

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES
 (Cont.)

B. Storage (Cont.)

83. a. Are facility personnel trained and the training documented per Part B Permit specifications?

Date of last training session: _____

- b. Are drivers trained in accepting proper containers and manifests/hazardous waste handling?
- c. Are all personnel familiar with security procedures and controlling access to storage site?
- d. Are training records kept for at least three years?
- e. Are semi-annual emergency drills held involving all assigned employees, with notice and coordination with local authorities?

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES
 (Cont.)

B. Storage (Cont.)

84. a. Is there an emergency alarm system in the area of hazardous waste storage? Adequate?
- b. Is the location's emergency response equipment properly inventoried and maintained? Complete per Part B Permit?
- c. Are emergency contingency names and phone numbers current? Available?
- d. Is the storage area in good condition, no cracks or defects in dikes, floors, etc. Fully meets Part B Permit specifications.
85. All wastes stored in appropriate containers, in good condition, labeled, and dated.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IV. HAZARDOUS WASTE ACTIVITIES
 (Cont.)

B. Storage (Cont.)

86. RCRA required
 "DANGER-UNAUTHORIZED
 PERSONNEL KEEP OUT"
 signs at each facility
 entrance/exit.
87. No unmarked containers
 of waste requiring
 analysis or identifica-
 tion for disposal.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

V. LIQUID REPACK AND YARD

88. All safety equipment maintained and accessible.
89. REPACK INSTRUCTION SHEET PROPERLY USED BY OPERATOR.
90. a. Approved labels on hand before repack, and properly applied to drums; UN numbers applied where needed.
- b. MSDS on each product, and written procedures on hand and readily available to all personnel for all repack processes including bulk loading and unloading, washing, drumming, bagging, etc.
91. USP repack area equipment and piping in clean condition, with caps in place.
92. Bulk and repack samples retained per Operations Manual.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

V. LIQUID REPACK AND YARD
 (Cont.)

93. Scales check tested prior to each use and certified within past 6 months. Test Date(s):

94. Confirm at least two people in attendance during packaging or bulk loading and unloading.
95. Transfer hoses carry monthly inspection tag. Test dates recorded.
96. WORK AREAS UNCLUTTERED AND CLEAR FOR EMERGENCY EGRESS.
97. SAFETY SHOWERS/EYE WASH FUNCTIONING AND UNOBSTRUCTED.
98. Electrical panels/ switches/conduit identified and in good condition and unobstructed.
99. Grounding system in good condition: Each drum clipped where applicable. Tools spark-proof.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

V. LIQUID REPACK AND YARD
 (Cont.)

- 100. All metal tanks properly grounded.
- 101. Filling module operated to confirm mechanically safe operable condition.
- 102. EXHAUST VENTING AT MODULE AND WASH RACK OPERABLE AND ADEQUATE.
- 103. Transfer hoses and lines drained into proper containers. Unused hoses capped and racked.
- 104. No unidentified material stored on site.
- 105. On-site waste disposed of properly.
- 106. Corrosive repack floors maintained.
- 107. NO EVIDENCE OF LINE OR HOSE DRAINAGE TO DIKES: NO DRIPPAGE FROM VALVES.
- 108. DIKES IN GOOD CONDITION WITHOUT CRACKS; DRAIN VALVES OPENED ONLY TO RELEASE TESTED WATER.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
— — —	— — —	— — —	— — —
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— — —	— — —	— — —	— — —

COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

V. LIQUID REPACK AND YARD
(Cont.)

109. All tankage valves closed except as needed.

110. STORAGE TANKS MAINTAINED AND CONTENTS IDENTIFIED USING NFPA SIGNALS AND MCKESSON LABELS.

111. Fixed lines and storage tanks identified by product using McKesson brand labels.

112. Tank gauges operable, gauge glasses clear.

113. Product transfer from T/T or T/C to filling area is fixed lines for direct filling of hazardous materials.

114. Pump maintenance. No seal leakage; necessary drip from packed shafts contained.

115. Inbound driver warning signs posted at unloading station.

116. Loading platforms in safe condition.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

V. LIQUID REPACK AND YARD
 (Cont.)

- 117. Neutralization tanks intact or covered; in operable condition with pump & testing system working. Only permitted products for neutralization (acids & caustics) ever go into wash water/neutralization system; no solvents, chlorinateds, hydrocarbons, etc., are ever washed or released into this system.
- 118. OSHA guards on compressors. Warning sign in place.
- 119. Recovery drums empty and available for emergencies.
- 120. Rail siding clean of spilled products and trash.
- 121. Product and empty drums in outside storage stacked neatly. Poly drums 3 high, max.
- 122. Flammable drums stored in OSHA maximum groups of 40 drums; away from buildings.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

V. LIQUID REPACK AND YARD
 (Cont.)

- 123. Evidence of spillage on paving leading to possible regulatory censure.
- 124. Pallets stacked safely; broken pallet accumulation limited.
- 125. Trash receptacles away from building and dock.
- 126. Fuel pumps secured when not in use; "NO SMOKING" and "ENGINE OFF" signs displayed.
- 127. Current Material Safety Data Sheets for hazardous chemicals accessible. Hazardous Communications Program available.
- 128. Sample bottles labeled in accordance with the Hazard Communications Program.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VI. DRY REPACK FACILITIES

A. General

- 129. Operators trained and documented for all machinery.
- 130. Spills recovered and rebagged on each lot or run.
- 131. Broken bags repaired or rebagged daily.
- 132. Bags properly stacked and stored.
- 133. Product dust effectively contained.

B. Safety

- 134. Floors free of material/shipping hazards.
- 135. Eye protection and respiratory protection provided and used.
- 136. Employees handling bags are trained in proper lifting techniques; training documented.
- 137. "Machine Starts Automatically" signs in place as appropriate.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VI. DRY REPACK FACILITIES
 (Cont.)

B. Safety (Cont.)

- 138. Scales certified/
checked; random bags
regularly spot-checked
and documented.
- 139. Blowers/dust collectors/
vents functional at all
times.
- 140. Belt/chain guards in
place.
- 141. a. Rail siding clean
with cars chocked
and derails in
place.

b. siding in good
condition with
proper drainage.
- 142. Current Material Safety
Data Sheets for
hazardous chemicals
accessible. Hazard
Communications Program
available.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

VII. LABORATORIES

A. General

- 143. Written procedures are available for all tests performed.
- 144. All test results are recorded only in bound notebooks.
- 145. Supporting data for all tests (instrument readings, calculations, etc.) always recorded in notebook.
- 146. Laboratory waste disposed of in labeled waste containers.
- 147. Spills are immediately cleaned up; housekeeping adequate.

B. Safety

- 148. Fume hood is functional and unobstructed.
- 149. Gas cylinders secured and upright.
- 150. Emergency phone numbers posted.
- 151. Guard rails on storage shelves.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VIII. COMPRESSED GAS REPACK

A. Training/Documentation/Records

156. Packaging procedures available to personnel in supervisor's office.
157. Compressed Gas Association and Chlorine Institute pamphlets available to personnel.
158. Each employee trained and documented for tasks assigned him.
159. Container inspection, filling, testing, destruction forms used and retained on file.
160. Employees authorized to test containers registered with DOT.
 Name(s) _____

161. Hydrostatic test equipment DOT registration current:
 Last Dated _____

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VIII. COMPRESSED GAS REPACK
 (Cont.)

B. Safety/Emergency Procedures

- 162. Personnel provided and carry escape respirators.
- 163. Eye protection program enforced.
- 164. EMERGENCY ALARM FUNCTIONING. LAST TEST DATE: _____
- 165. Minimum 18" windsock in place, in sight of other personnel.
- 166. Emergency phone numbers (including neighbors) posted in area.
- 167. AUTOMATIC SHUTDOWN EQUIPMENT OPERABLE. LAST TESTED: _____
- 168. EMERGENCY KITS LOCATED APPROPRIATELY AND SEALED.
- 169. All lines color coded and paint maintained.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
---	---	---	---
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VIII. COMPRESSED GAS REPACK
 (Cont.)

B. Safety/Emergency Procedures
 (Cont.)

170. Current Material Safety Data Sheets for hazardous chemicals accessible. Hazard Communications Program available.

171. CHLOREP emergency response team personnel identified, training documented.

172. CHLOREP refresher training provided within last 6 months.

Last Date: _____

173. Emergency response vehicle in complete readiness.

174. Safety signs in place.

C. Procedures

175. All containers evacuated and inspected internally prior to filling.

176. Pressure/vacuum gauges operational at proper stations.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
---	---	---	---
---	---	---	---
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---	---	---	---
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

VIII. COMPRESSED GAS REPACK
 (Cont.)

C. Procedures (Cont.)

- 177. Devalving operations are such to limit back injuries.
- 178. Exposure of container openings limited to prevent thread corrosion.
- 179. All cylinders inverted for foot ring and corrosion inspection.
- 180. Maximum 30 PSIG air pressure at work bench (OSHA).
- 181. All rebuilt valves tested to 500 psig.
- 182. Ton fuse plugs replaced with new plugs at each re-test.
- 183. Container wash station efficiently ventilated.
- 184. Fill station piping, flex hose or tubing, valves in safe operable condition.
- 185. Filling scales certified in last 6 months.

Last date(s): _____

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

VIII. COMPRESSED GAS REPACK
 (Cont.)

C. Procedures (Cont.)

- 186. Ton lift devices at scales in safe operable condition.
- 187. Only approved flex connections used at fill stations.
- 188. Containers properly stencilled and labeled per DOT and EPA.
- 188. Vacuum systems efficient for operational safety.
- 190. Compressor belt guards and signs in place (OSHA).
- 191. Air dryers functional.
 Last tested: _____
- 192. Chemical goggles or equivalent required and used in bleach and caustic area.
- 193. Pumps and piping maintained in safe operating condition in bleach/sulfite/aqua areas.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —
— —	— —	— —	— —

COMMENTS:

1st Quarter: _____

 2nd Quarter: _____

 3rd Quarter: _____

 4th Quarter: _____

VIII. COMPRESSED GAS REPACK
 (Cont.)

C. Procedures (Cont.)

- 194. Rail car domes locked during non-working hours.
- 195. Compressed gas piping and hoses depressured during off hours.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
---	---	---	---
---	---	---	---

COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

IX. BULK CHLORINE FACILITIES

196. Tank truck angle valves rebuilt per DOT; each rebuild and test documented.
197. All tankers within next test-due date.
198. TRACTORS EQUIPPED WITH OPERABLE 2-WAY COMMUNICATION.
199. Bulk deliveries are via preplanned route.
200. Truck scales certified annually, checked with public scale each quarter.
- Last Date: _____
201. Loading hoses inspected monthly, tested quarterly.

Standards			
NI FAV	NI FAV	NI FAV	NI FAV
---	---	---	---
---	---	---	---
---	---	---	---
---	---	---	---
---	---	---	---
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COMMENTS:

1st Quarter: _____

2nd Quarter: _____

3rd Quarter: _____

4th Quarter: _____

SAFETY & COMPLIANCE REVIEW

ACTION REPORT

**SERVICE
CENTER:**

REVIEWED BY:

DATE:

REVIEWED WITH:

Date to be Cor- rected by	Person(s) Respon- sible for Correc- tion(s)	Date Correc- tion Completed
------------------------------------	---	--------------------------------------

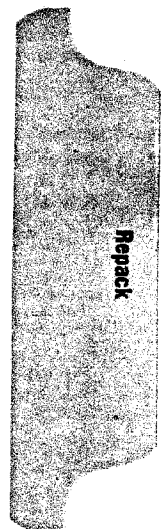
Corrective Action to be Taken

Item Number	Repeat	Description of Item
----------------	--------	---------------------

Repeat

Item
Number

COPIES TO: Regional Vice President
Regional Operations/Safety Manager
Area Director
S. C. Operations Manager



CUSTOM LABELS AVAILABLE
ALLIED TYPESETTING, INC.

<u>LABEL NUMBER</u>	<u>NAME</u>	<u>CURRENT DATE</u>	<u>NET WT</u>
A-101	Dry Alum	1185	None
A-102	Anhydrol, PM-4135	1185	None
A-103	Anhydrol, PM-4157	1185	None
A-104	Anhydrol, PM-4078	1185	None
A-105	Liquid Alum	1185	None
A-106	Ammonium Thiosulfate Solution	1285	600
A-107	Anhydrol, PM-4081	1285	366
A-108	AP-73R	1285	None
A-109	Anhydrol, PM-4084	0186	360
A-110	AP-62	0186	513
A-111	Anhydrol, PM-4085	0186	366
A-112	Alfol 6	0286	350
A-113	Alfol 8	0286	350
A-114	Anhydrol, PM-4080	0286	366
A-115	Acetic Acid, 84%	0286	450
A-116	Alfol 10	0286	350
A-117	Alfol 12	0286	350
A-118	Alfol 14	0286	350
A-119	Alfol 16	0286	350
A-120	Alfol 18	0286	350
A-121	Alfol 1618	0286	350
A-122	Alfol 1216	0286	350
A-123	Alfol 1218	0286	350
A-124	n-Amyl Acetate	0286	400
A-125	Acetic Acid, 56%	0386	450
A-126	Acetic Acid, 90%	0386	450
A-127	Antimony Trioxide	0486	50
A-128	All Brite Lacquer Thinner	0786	420
A-129	Anhydrol (R) Solvent, PM-4083, 200 Proof	0886	357
B-100	Sec-Butyl Alcohol	0286	369
B-101	n-Butyl Alcohol	0386	374
B-102	Benzyl Alcohol, NF	0386	460
B-103	Betz Energy Blend	0686	455
C-100	CycloSol 63	1185	None
C-101	Cyclesolv 60	1185	None
C-102	Chlorothene SM Solvent	0186	592
C-103	Chelaclean 103B	0186	None
C-104	Cyclesolv 99	0286	None
C-105	Carbowax (R) Polyethylene Glycol 300	0386	510
C-106	Cyclohexanol	0486	425
C-107	Cyclohexylamine	0586	None

MKIL40388

MK094798

MKIL189389
McK00238

**CUSTOM LABELS AVAILABLE
ALLIED TYPESETTING, INC.**

<u>LABEL NUMBER</u>	<u>NAME</u>	<u>CURRENT DATE</u>	<u>NET WT</u>
C-108	Caustic Soda, Liquid, 20%	0586	550
C-109	Chacon #17	0686	2482
C-110	Chacon #101	0686	2501
D-100	N,N-Diethylethanolamine	1285	405
D-101	DDBSA	1285	450
D-102	Dipropylene Glycol	0186	474
D-103	Dowfax 2A1 Solution Surfactant	0386	530
D-104	Dolco Blend	0686	568
D-105	Dalpad (R) A Coalescing Agent	0786	505
E-100	2-Ethylhexanol	0386	None
E-101	2-Ethylhexoic Acid	0386	419
E-102	Ethylenediamine	0886	3350
F-100	Filmcol C-2, 190 Proof	0386	366
F-101	Flokem #0092	0586	550
G-100	Glycol Ether DM	1185	None
G-101	Glycol Ether PM Acetate	0386	None
G-102	Glycerine 96%, USP	0786	315
H-100	Hexane	1185	None
H-101	Heptane	0186	333
I-100	Isophorone	1185	None
I-101	Isopropyl Acetate	0286	None
I-102	Isobutyl Alcohol	0386	369
I-103	Isopropyl Alcohol, 91%	0386	369
I-104	Ink Solvent PM-6127	0686	357
L-100	Lockheed Blend C41683	0586	380
M-100	McKSolv 805	1285	None
M-101	McKSolv 820	1285	None
M-102	McKSolv 41	1285	419
M-103	McKSolv 815	1285	None
M-104	McKWet 9.5N	1285	None
M-105	McKWet 9.5N	1285	480
M-106	N-Methylpyrrolidone	1285	None
M-107	Mineral Oil, Feed Grade	1285	385
M-108	McKSolv 60	0186	335
M-109	McKSolv 32	0186	600
M-110	McKSolv 61	0186	592
M-111	McKWet AL 1285-03	0186	480

CUSTOM LABELS AVAILABLE
ALLIED TYPESETTING, INC.

<u>LABEL NUMBER</u>	<u>NAME</u>	<u>CURRENT DATE</u>	<u>NET WT</u>
M-112	McKWet AL 1285-04	0186	480
M-113	McKWet AL 1285-05	0186	460
M-114	McKSolv DLR	0186	None
M-115	McKSolv 59	0186	2160
M-116	McKSolv TX	0286	382
M-117	McKSolv 42	0386	None
M-118	Monoisopropanolamine	0386	440
M-119	McKSolv Flushsolv #7	0486	None
M-120	McKSolv 68	0486	None
M-121	McKSolv 69	0586	460
M-122	McKSolv 70	0586	545
M-123	Methyl Amyl Ketone	0586	366
M-124	White Mineral Oil 70% Tech	0786	385
M-125	McKSolv 73	0786	None
M-126	Methanol Ethyl Acetate Blend	0886	375
M-127	Mineral Oil 6970	0986	1850
N-100	Neodol 23-3	0386	410
N-101	Neodol 91-2.5	0386	410
N-102	Neodol 25-9	0786	440
N-103	Neodol 91-8	0786	440
N-104	Neosol 190	0886	366
O-100	Oleic Acid 1005	0186	400
O-101	Oleic Acid 1010	0186	400
P-100	n-Propyl Acetate	1285	404
P-101	n-Propyl Acetate	1285	None
P-102	Pluronic L-62	0386	460
P-103	Platewash #1	0486	383
P-104	Propylene Dichloride	0686	520
P-105	Propionic Acid	0786	420
P-106	Propasol Solvent P	0786	405
P-107	Propylene Glycol, USP	0786	265
P-108	Polyol P 70%	0886	600
R-100	Ragu Caustic Blend	0586	None
S-100	Shell Sol B	1185	None
S-101	Shell Sol 140	1185	None
S-102	Synasol, PM-3224	1185	None
S-103	Synasol, PM-509	1185	None
S-104	Sellers Solvent	0286	385
S-105	Stearic Acid Flux	0386	417
S-106	Synasol Solvent PM-41, 190 Proof	0486	367
S-107	Sanitek Rosin Blend	0686	357

**CUSTOM LABELS AVAILABLE
ALLIED TYPESETTING, INC.**

<u>LABEL NUMBER</u>	<u>NAME</u>	<u>CURRENT DATE</u>	<u>NET WT</u>
T-100	Tergitol NP-9	0186	480
T-101	Tergitol NP-10	0186	None
T-102	Triton DF-12	0286	450
T-103	Triton DF-16	0286	450
T-104	Triton H-55	0286	525
T-105	Triton H-66	0286	525
T-106	Tamol 731, 25%	0286	500
T-107	Tricresyl Phosphate	0386	530
T-108	Tripropylene Glycol	0386	470
T-109	Tetrapotassium Pyrophosphate, 60%	0586	700
T-110	T-Chem Blend	0686	None

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GENERAL

Considerable effort has been extended in selecting a label stock and an adhesive which, under proper conditions of application, provide permanence and good adhesive qualities for a variety of surfaces. In order to insure McKesson Chemical Group's compliance with DOT regulations, safety in general, and to minimize product and personnel liability exposures, it is essential that all Chemical Group locations follow the procedures set forth.

SCOPE

This applies to all adhesive-backed labels supplied by McKesson Chemical Group and most particularly to labels with one corner cut on the diagonal. The latter is the new label stock.

EQUIPMENT
NEEDED

A firm rubber roller, obtainable from a Marsh stencil system, 2" x 3-1/2" or equivalent. Although this is an ink stencil roller, it works well in the label application.

Safety containers for handling: Methylene Chloride, VMP Naptha Mixture; Methanol, VMP Naptha Mixture.

Respiratory equipment for use with Methylene Chloride or Methanol Mixtures.

PROCEDURE

The best adhesive in the world will not adhere to a dirty (chemical or other), soiled surface. The drum surface, whether plastic or steel, must be cleaned to provide a receptive surface for the label adhesive. Except in conditions of extreme cold, no other glue is needed to achieve a label placement with satisfactory adhesion.

Step 1

Prepare a 1:1 (equal volumes) mixture of Methylene Chloride - VMP Naptha, which will be referred to as Mixture A; and a 1:1 (equal volumes) mixture of Methanol and VMP Naptha, which will be referred to as Mixture B.

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PROCEDURE
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Step 2

(a) In the case of wet or moist steel or plastic container surface, using the safety precautions below, wipe the drum surface with a clean rag lightly wetted with Methanol. Allow to dry. Proceed to Step 3.

(b) In case of soiled plastic containers, using a clean rag lightly wetted with Mixture A, vigorously wipe off the label area surface on the drum. Proceed to Step 3.

(c) In case of a soiled steel drum, using a clean rag lightly wetted with Mixture B, vigorously wipe off the label area surface on the drum. Proceed to Step 3.

Step 3

Allow the drum surface to dry.

Step 4

Remove the label backing, then contact the container surface with the approximate center of the label, quickly contact the remaining label area by pressing with outward sweeps toward the label edges. Label should be properly aligned and neat.

Step 5

Immediately using firm strokes (center to edges), roll the label surface with a firm rubber roller. By doing this, good contact will result between the label and the drum surface.

Step 6

Return excess labels to storage. Clean rubber roller.

SAFETY

In carrying the above procedures, follow these precautions:

1. Use the solvent mixtures in well ventilated area.
2. Use protective hand cover.
3. Avoid inhalations of vapors.
4. Avoid open flames.

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SAFETY
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5. Store cleaning rag in clean metal container.
6. Store solvents in a clean closed metal container out of sun, away from ignition sources.

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CODE LABELING	9/15/85	9/15/85	

GENERAL

In the past, there have been two types of code labeling. The first of these, Type A, involved placing an identifying name or number on a container in addition to the product label. In this case, no label or information on the label was removed. Customers requested this type of code labeling because it minimized formulation errors on the part of operators who may not be able to read chemical names. Type A code labeling is really no more than placing a customer's identification on a container. Since no hazard information is removed from a container Type A code labeling may be used when requested. No additional formal approval is required beyond that normally needed for the transaction involved.

The second type of code labeling was known as Type B. Here, the customer required an identifying name or number be placed on the container, instead of the product label. Customers requested Type B code labeling because they wished to keep secret the identities of the products involved. However, the OSHA Hazard Communication Standard, and its state and local counterparts, no longer permit product secrecy for many products. Consequently, Type B code labeling is no longer allowed for those products.

Type B code labeling will be permitted only in cases where all chemicals involved are non-hazardous according to the Hazard Communication Standard. Non-hazardous chemicals are those which do not have a DOT hazard classification, do not have a TLV or PEL, or do not meet certain other criteria. Contact the Technical Director at Home Office for advice on specific chemicals. To obtain Type B code labeling approval, submit your request to your Area Operations Manager and Area Director. After their approval, the request is sent to the Technical Director at Home Office. Upon his approval, a Product Code number will be assigned, repack or purchase approval granted, and a RIS issued.

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GENERAL

Various federal, state, and local laws or regulations require the registration or permitting of products, plants, process equipment, and storage tanks. It is imperative that Operations management at Service Centers, Area, Region, or Home Office level, communicate knowledge of any such requirement and provide the necessary assistance and information to ensure that the appropriate registration/permit application is filed. The following is a summary of permitting responsibility and procedures for submitting of such applications and compliance with reporting requirements.

1. Federal Permits

Application to register a product and/or plant as required by federal regulations or law is filed by Home Office Chemical Technical Director. It should be borne in mind that these are federal registrations or permitting requirements which are applicable on a national basis. Renewal and/or revision of existing federal permits will likewise be handled by Home Office. However, should any reports be required for any permit filed, the responsibility for submitting the required reports rests with the Service Center, Area, or Regional Operations Manager, as appropriate and assigned.

It should be borne in mind that there are federal registration or permitting requirements which are not applicable on a national basis. Such registration/permits must be filed on a local basis (example: ATF, DOT cylinder test certification, etc.).

2. State Permits

Applications to register or secure a permit for a product, plant, equipment, or tank(s) as required by state regulations or law, will be filed by the Regional Compliance Manager. Renewals or revision of such registrations will also be handled by the Regional Compliance Manager.

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GENERAL
(Cont.)

The Area Operations Manager is responsible for filing of any required reports. However, if a single report involving two or more Service Centers is required, he shall provide the Regional Compliance Manager with the necessary information for him to file a consolidated report.

3. Local Permits

Applications to register or secure any permits required by local authorities (county, city, village, etc.) and which are applicable to a specific facility, will be filed by Area Operations Manager.

The Area Operations Manager is responsible for the filing, renewal, or revision of such permits and to see that any required reporting requirements are complied with.

4. Renewal/Revision of Applications for Federal/State/Local Registrations

- a. Any required renewal or revision of any of the above registration(s) or permit(s) will be handled at the same level at which the original registration/application was filed.
- b. The Service Center Operations Manager shall maintain a file and monitor all registrations/permits and advise the responsible person prior to their expiration to assist in timely renewal or revision.

SPECIFIC

The following is a summary of basic requirements of various federal agencies for which McKesson Chemical is presently registered through Home Office.

1. Environmental Protection Agency (EPA)
 - a. RCRA - Facility Registration/Permitting

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(Cont.)

Facilities which generate, transport, store, or dispose of hazardous wastes must be registered and permitted under the Resource Conservation and Recovery Act. Applications for establishment to be permitted as a generator, transporter, or T/S/D are to be referred to Area Operations Manager who will request Home Office to file an application.

- b. The appropriate state agency (DNR, PCA, NCB, etc.) is also involved in the processing of a RCRA application. Home Office will handle both simultaneously.
2. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
 - a. Definition - "Pesticide," under FIFRA, is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest (insect, rodent, nematode, fungus, weed, bacteria, etc., except micro-organisms on or in living man or animals); and any substance or mixture of substances intended for use as plant regulator, defoliant, or desiccant.
 - b. Product Registration - All pesticides sold or distributed in the U.S. must be registered. Applications are submitted to the EPA Office of Pesticide Programs in Washington, D.C., along with supporting data (efficacy, hazard potential, etc.) and proposed labeling. If approved, the product will be assigned a number which must appear on the label.

A product(s) which must be registered with USEPA may also require registration with an appropriate state agency. The Area Operations Manager shall file the appropriate registration application as required.

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- c. Establishment Registration - All pesticide-producing establishments (including pesticides repackaging sites) must be registered. The establishment registration number must appear either on the label or on the container. (For pesticides repackaged for us by an outside firm, that firm's establishment number must be shown, not ours. However, the label will still bear McKesson registration number for the product itself.)
 - (1) Applications for establishment registration are submitted by Home Office to the EPA regional office having jurisdiction over the state in which our headquarters is located, i.e., in San Francisco.
 - (2) EPA will mail directly to the registered establishment a form for reporting production data, etc. The plant returns it to the EPA regional office having jurisdiction over the state in which the establishment is located. After the initial filing, reports are to be submitted annually on or before February 1.
3. Federal Food, Drug, and Cosmetic Act (FDA)
 - a. Definition - In addition to several other classes of products, any USP or NF grade material is defined as a "drug" under the Federal Food, Drug, and Cosmetic Act.
 - b. Owners or operators of all drug establishments (including repackers and relabelers) must register each establishment and submit a list of every drug in commercial distribution. Establishment registrations are renewed annually; companies whose names begin with the letter "M" must submit the form by April of each year. Drug listing updates are required every June and December (or optionally as the changes occur).

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- c. For USP or NF grade materials repackaged for us by an outside firm, the drug listing form must show that firm's establishment number and our product code for the material itself. Neither number is required on the label; however, the establishment must have on file a label signed and dated by the person or persons responsible for approval of such labeling.
4. Department of Agriculture (USDA)
 - a. The USDA and/or departments or divisions thereof have jurisdiction of chemicals used under this scope of authority.
 - b. This agency publishes an annual edition of "List of Chemical Compounds Authorized for Use Under USDA Meat, Poultry, Rabbit, and Egg Products Inspection Programs."
 - c. Compounds evaluated and authorized by letters after issue of the publication are also acceptable. Once a compound appears in the subsequent edition, the letter is no longer valid as proof of authorization.
 - d. No registration numbers or certificates are issued.
 5. Alcohol, Tobacco, and Firearms (ATF)
 - a. The Department of Treasury Bureau of Alcohol, Tobacco, and Firearms regulates the distribution and use of denatured alcohol. Establishment registration, as well as product registration, is required. Significant detail as to equipment, formulas, product, etc., must be submitted with application. Area Operations Manager shall develop necessary information and data and, with the assistance and approval of Home Office Technical Director, will file the applicable permit applications.

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SPECIFIC
(Cont.)

- b. Specific reporting requirements are mandatory. Such reports shall be filed by the Service Center Operations Manager in the prescribed manner and form.

6. Other Registration:

- a. As stated above, there exists a variety of federal, state, or local laws, regulations, or ordinances, some of which may require registration or permits. It is incumbent on the Service Center Operations Manager to be aware of such requirements and to initiate a request for assistance in ensuring compliance therewith.
- b. New or revised regulation may impact storage tanks, fume removal equipment, neutralization pits, etc. The Service Center Operations Manager shall inform the Area Operations Manager of any proposed or adopted regulations which may impact our repackaging operation.

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GENERAL

Custom packaging may be defined as performing a packaging service (drums, cans, bags, etc.) to the specification of the customer for an agreed sum. Such packaging could involve:

1. Customer owned product into the customer's container or McKesson's container,
2. McKesson owned product into the customer's container or McKesson's container, or
3. Customer owned product from McKesson storage into tank trucks or tank cars (terminalizing) which may or may not be either the customer's or McKesson owned (leased) units. The product may or may not be a blend or formulated mix, and the label may or may not be a McKesson label.

Custom packaging requests are expected to increase primarily because:

1. McKesson is better facilitated than in the past to perform such functions.
2. McKesson has generated greater acceptance and confidence in its ability to perform such functions.
3. Freight factors and other economic considerations lead the potential customer to seek out national capabilities.
4. Waste control, air/water pollution, OSHA, and other regulatory acts certainly influence this trend.
5. Liability awards and McKesson's ability to carry high insurance protection also are considerations not overlooked.
6. Some packaging is simply undesirable, and the customer may well desire to pass the problems on to someone else.

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HOME OFFICE APPROVAL

As with all packaging, it is Company policy that each custom packaging proposal receive formal Home Office approval prior to any commitment. Also, if an approved custom packaging agreement is terminated, or if there is no packaging activity for six months, it is not to be renewed without Home Office re-approval.

The regular "Request to Repack" form should be used. Recognizing that the form does not address itself to all necessary considerations, it should be accompanied with:

1. A separate narrative detailing the understanding with the customer, as well as a copy of the proposed agreement stating all specifications, lab tests, procedures, etc. (See Reference 20.71.)
2. Copy or facsimile of the label indicating source of same.
3. Copy of MSD sheet.
4. Worksheet showing your cost:
 - a. Estimated to perform packaging (should be detailed and show all component parts of cost, e.g., materials, labor, overhead, etc., on a unit basis.)
 - b. Selling price/unit.
 - c. Total units involved.
 - d. Estimated net profit, total and/or incremental.
5. Estimates and details of additional equipment or personnel required.
6. Credit approval.

Custom packaging approval requests should be initiated by functionally concerned, Area and Regional staff, as well as Regional Vice President, and will be expedited through the appropriate departments in Home Office.

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CONSIDERA-
TIONS

Dependent upon the product(s), location, and other specifics, the following is a partial list of concerns that necessarily will have to be addressed before any approval or agreement may be made:

1. Legal (indemnification, penalties, contract approval, etc.).
2. Insurance (requirements for certificates of insurance).
3. Taxes (inventory, alcohol, etc.).
4. Hazards (employees, public, protective equipment, etc.).
5. Pollution (air, water, waste).
6. Economics (Is it in our interest?)
7. Facilitation (protective storage, space, adequate/proper equipment, dedicated equipment, etc.).
8. Training (sophistication and expertise required).
9. Transportation (adequate equipment, tie-up of equipment).
10. Time demands or constrictions.
11. Marketing impact (conflict with program).
12. Material management systems (productivity, storage, inventory, etc.).
13. Supplier relations (other agreements in conflict).
14. Customer relations (support to competition, etc.).
15. Quality control (lab requirements - sensitivities).

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CONSIDERA-
TIONS
(Cont.)

16. Administrative (reports, compensation, record-keeping, shipping papers).
17. Label (adequate; meet regulatory requirements, etc.).
18. Permits or governmental approvals or product registration (EPA, FIFRA, and other federal, state and local).
19. Compatibility.
20. Container (compliance, protection, etc.).
21. Any special handling required.

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CUSTOM PACKAGING - SAMPLE CONTRACT	6/01/86	6/01/86	

CONTRACTS

An agreement to custom repack must be in a contract form, whether it be issued by the customer or by the McKesson Chemical Group. The following contract form for custom packaging has been drafted by the Law Department as a sample guide to assist our repack operations in developing a contract where it is deemed necessary.

Additions, deletions or modifications of this format may be required to fit the particular arrangement. A draft of the final agreement negotiated is to be submitted to the Law Department for review prior to signing such agreement. Assistance in drafting any additions or modifications will also be provided by the Law Department.

SAMPLE CONTRACT

A sample contract for custom packaging begins on the next page.

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CUSTOM REPACK AGREEMENT

AGREEMENT made as of this ____ day of _____, 198_,
between McKesson Chemical Company, a division of McKesson
Corporation, a Maryland corporation, having an office at

("McKesson") and _____, a _____
[corporation, partnership, or sole proprietorship] having an
office at _____ ("Customer").

RECITALS

McKesson is in the business, among other things, of
repackaging various chemicals at facilities operated by it
at various locations throughout the United States.

Customer is desirous of having McKesson package for it,
its requirements of certain chemical products (the
"Products") at the McKesson Service Center(s) located at
_____ (the "Facilities").

AGREEMENTS

(i* Use if the services are to be provided for a set term) 1. Term. This Agreement shall be (i* for a term commencing _____, 198_ and ending _____, 198_.) (ii* one year in duration, effective _____ and shall continue in full force and effect

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(ii* Use if the services are to be provided until the Agreement is terminated) thereafter unless and until terminated as of the end of the contract year by at least ninety (90) days prior written notice by either party to the other. If either party has not fully complied with any of the terms hereof, either party may terminate at any time upon thirty (30) days prior written notice.)

2. Products. The Products to be packaged for Customer and its estimated requirements therefor are listed on Schedule "A" hereto. The specifications for the Products are set out on Schedule "B" hereto.

(iii* Use where Customer supplies containers) 3. Containers. The Products are to be packaged in _____ (the "Containers") to be supplied by _____. (iii* McKesson will examine the Containers only to discover if they contain foreign matter or obvious defects, but McKesson shall not, by reason of such examination, assume any responsibility or liability for the condition of such Containers or as to their suitability for the use to which Customer has instructed they be put.)

(iv* Use where McKesson supplies containers) (iv* Since McKesson is not a manufacturer of containers, it represents only that such containers are of the kind and quality described herein. Customer shall review the specifications therefor and shall approve same for use hereunder. McKesson makes no other warranty or representation express or implied, regarding such Containers.) Compliance with DOT requirements shall be the responsibility of the shipper.

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4. Labels. Copies of all labels, decals and stencils to be attached or affixed to the Containers ("labels") are attached as Exhibit "1" hereto. Any specifications for attaching or affixing same are set forth on Schedule "C" hereto. The labels have been prepared by (v* Use where Customer supplies labels) (v* Customer which is solely responsible for their contents. Customer represents and warrants that the labels are accurate, in compliance with applicable law, and adequate to fully advise McKesson and others of the safety requirements and hazards associated with the storage, handling and use of each of the Products.) (vi* McKesson and have been approved by Customer.)

5. Material Safety Data Sheets. Copies of all current Material Safety Data ("MSD") sheets for the Products are attached as Exhibit "2" hereto. The MSD sheets have been provided by (vii* Use where Customer supplies the MSDS) (vii* Customer which is solely responsible for their contents. Customer will, during the life of this Agreement, continue to provide McKesson with the most current MSD sheets for each of the Products. Customer represents and warrants that all MSD sheets will be accurate, in compliance with applicable law, and adequate to fully advise McKesson and others of the safety requirements and hazards associated with the storage, handling and use of each of the Products, and that Customer will comply with applicable law in regard to providing the MSD sheets to others.) (viii* McKesson and have been approved by Customer. Customer will comply with applicable law in regard to providing the MSD sheets to others.)

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6. Bulk Chemicals. McKesson shall maintain at its facilities, the Products in bulk stock (the "bulk chemicals") sufficient to meet Customer's requirements. If the bulk chemicals are provided by Customer, they shall be delivered by Customer by rail or motor carrier to McKesson's loading dock or storage tanks in such quantities, and at such times as McKesson may direct and shall be unloaded by _____.

7. Orders. At least _____ days prior to the date on which Customer requires delivery of the Products, it shall give to McKesson a firm packaging order for the quantity required. In no event shall McKesson be required to package for delivery to Customer, more than _____ [pounds] [gallons] of the Products in any _____ period. Each packaging order to Customer shall constitute a separate and independent transaction and McKesson may recover for each such repackaging service without reference to any other.

(ix* Use appropriate reference-- pound, gallon, container, etc.)

8. Rates. For the services to be provided by McKesson hereunder, Customer shall pay to McKesson the sum of \$___ for each (ix* _____) of the Products packaged by McKesson hereunder. Customer shall also pay the freight from McKesson's facilities to Customer's dock, and all taxes applicable to sale of the Products to Customer (other than income, franchise or similar taxes measured by McKesson's income). It is contemplated that all services hereunder are to be provided during McKesson's normal working hours. Any

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overtime or other additional expense incurred by McKesson for work performed at Customer's request beyond such hours shall be paid by Customer. Any personal property taxes assessed against any repackaged Products while in the hands of McKesson shall be paid by Customer.

9. Payments. Invoices for services hereunder shall be rendered to Customer on or before the ____ day of each month for materials packaged and shipped to Customer during that month. All invoices shall be payable net ____ days.

10. Samples. McKesson shall retain for a period of _____ a representative sample of each batch of the Products packaged for Customer. Customer shall have access thereto at reasonable business hours.

11. Shortages. Where the bulk chemicals are supplied by Customer, the quantity thereof shall be determined by measurements made by McKesson and, unless objected to within five days, shall control. Losses or shortages (except any shrinkage which is inherent in the losses which do not exceed ____%) shall be borne by McKesson and shall be reimbursed to Customer at Customer's actual invoice cost therefor.

12. Indemnity. McKesson shall defend, indemnify and hold Customer harmless from all claims alleging personal injury (including death), property damage, economic losses, or other damages or losses (hereinafter "Losses") resulting from McKesson's negligence or intentional misconduct in its

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CUSTOM PACKAGING - SAMPLE CONTRACT	6/30/86	6/30/86	

performance of its obligations hereunder. Customer shall indemnify and hold McKesson harmless from all claims alleging Losses resulting from (i) McKesson's possession, handling, resale or use of any of the bulk chemicals, MSD sheets or labels supplied by Customer, or of any of the Products; or (ii) compliance with any specifications established by Customer; or (iii) any negligence or intentional misconduct of Customer in its performance of its obligations hereunder.

13. Insurance. McKesson shall during the term hereof, provide Customer certificates of insurance evidencing coverage for Statutory Workers' Compensation and Comprehensive General Liability coverage, with limits of not less than \$1,000,000 combined single limit for bodily injury and property damage, insuring McKesson's obligations hereunder. Such certificates shall provide that Customer will be given not less than ten days notice of cancellation or material change. Customer shall during the term hereof, provide McKesson certificates of insurance evidencing coverage for Statutory Workers' Compensation and Comprehensive General Liability coverage, with limits of not less than \$1,000,000 combined single limit for bodily injury and property damage, insuring Customer's obligations hereunder. Such certificates shall provide that McKesson will be given not less than ten days notice of cancellation or material change.

McKesson Operations

Section	Reference	Page	End
REPACK	20.71	8	
Subject	Issue Date	Effective Date	
CUSTOM PACKAGING - SAMPLE CONTRACT	6/30/86	6/30/86	

14. Limitation of Liability. No liability shall result to either party from delay in performance or non-performance, caused by circumstances beyond the control of the party affected, including, but not limited to, Act of God, fire, flood, strike or other labor trouble, shortages of labor, materials or transportation. Quantities so affected may be eliminated from the packaging order without liability, but the packaging order shall remain otherwise unaffected. In the event of a shortage of bulk chemicals or Containers (other than where same are supplied by Customer), McKesson shall have the right to allocate its available supplies among its customers, including Customer, on such basis as McKesson deems fair and equitable.

15. Claims by Customer. No claim of any kind for damages suffered by Customer arising from shortages in Products packaged by McKesson or for nondelivery of same shall be greater in amount than the price to be paid for the services provided by McKesson hereunder in respect of which such damages are claimed; and failure to give notice of any claim within sixty (60) days from the date of delivery or scheduled delivery shall constitute a waiver by Customer of any claim in respect of such services. McKesson shall not be liable for Customer's indirect or consequential damages arising from such shortages or nondeliveries.

16. Default. If Customer is in default with respect to any of the terms or conditions of this Agreement or if in McKesson's judgment, the financial responsibility of

Section	Reference	Page	End
REPACK	20.71	9	
Subject	Issue Date	Effective Date	
CUSTOM PACKAGING - SAMPLE CONTRACT	6/30/86	6/30/86	

Customer shall at any time be impaired, McKesson, at its option, may defer further packaging until such default is remedied, or, in addition to any other legal remedy, McKesson may decline further packaging orders.

17. Binding Effect. This Agreement and the schedules and exhibits hereto shall be binding upon and inure to the benefit of the parties hereto, their successors and assigns.

18. Assignment. This Agreement is not assignable in whole or in part by either party without the prior written consent of the other party.

19. Modification. This Agreement supersedes and replaces all prior agreements between the parties relating to the subject matter hereof. This Agreement constitutes the entire understanding between the parties and no modification or waiver thereof shall be of any force or effect unless in writing and signed by the party claimed to be bound thereby. No modification shall be effected by the acknowledgement or acceptance of packaging order forms, invoices, bills of lading, or shipping forms, containing different or additional conditions.

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McKesson
Operations

Section	Reference	Page	End
REPACK	20.71	10	X
Subject	Issue Date	Effective Date	
CUSTOM PACKAGING - SAMPLE CONTRACT	6/30/86	6/30/86	

20. Attorneys' Fees. In the event legal action is necessary by either party to enforce this Agreement or resolve a dispute arising hereunder, the prevailing party shall be entitled to recover reasonable attorneys' fees.

McKESSON CHEMICAL COMPANY

By _____

Title _____

Date _____

[CUSTOMER FIRM NAME]

By _____

Title _____

Date _____

Section	Reference	Page	End
REPACK	20.80	1	
Subject	Issue Date	Effective Date	
REPACK INSTRUCTION SHEET (RIS)	9/15/85	9/15/85	

GENERAL

The need for written instructions to chemical repack personnel becomes more and more apparent. This need arises from a combination of factors, including the variety and complexity of the many chemicals we repack; increasing legislation on the "employees's right to know"; the rapidly changing regulations on chemical exposure limits; and the trend in liability in workers' compensation decisions. We believe that the Chemical Group and all of its employees can benefit from a uniform and consistent procedure to inform and instruct employees of the various steps and safety protection requirements necessary in the repacking process of each different chemical.

Although the Repack Instruction Sheet, or RIS, (see Exhibit 1) is not a guarantee that we will avoid all possible problems in the repack process, the RIS will, if conscientiously and carefully completed, minimize lapses in communication between supervisor and repacker which have caused us difficulties in the past. The RIS is designed to help employee and employer alike.

The RIS is structured to communicate three basic functions of the repack operation:

1. The front section of the sheet covers the specific instructions for repacking a specific product; including number, type and size of container, label(s), markings, and detailed sampling and fill procedures.
2. The safety/health segment on the reverse side of the RIS gives specific instructions concerning protective clothing, respiratory protection, eye protection, first aid and spill control. Because it also informs the employee of the principal hazards of the product to be repacked, this segment might also function as an abbreviated Material Safety Data Sheet.
3. The final portion of the RIS is designed to remind the employee repacker that management wants and needs his comments concerning the task at hand, and/or the condition of mechanical or safety equipment. It also provides for controls on supervisory followup to the repacker's comments.

McKesson Operations

Section	Reference	Page	End
REPACK	20.80	2	
Subject	Issue Date	Effective Date	
REPACK INSTRUCTION SHEET (RIS)	9/15/85	9/15/85	

PREPARATION

The RIS originates at Home Office with the Request to Repackage. The Technical Director is responsible for assigning the RIS sheet an identifying code number, inserting the correct product name, and completing the Safety/Health portion of RIS. (He may contribute more if certain special information is indicated for that product.) The RIS is returned to Regional Operations from Home Office with the formal written Approval to Repack. (See Exhibit 2 for list of RIS currently issued.)

Should an emergency or one-time approval to repack be given by the region or Home Office, the Regional Operations and Safety Manager, after consultation with the Technical Director, shall complete the RIS form or instruct the branch on proper completion of the RIS form for that specific product. (Copies of such field-originated RIS forms should be sent to the Technical Director.) If a repack function is only a one-time or emergency event, the need for the RIS takes on even greater importance as a means of avoiding miscommunication.

Ample space is allotted for most entries except possibly those spaces reserved for sampling and filling procedures. If a procedure is only referenced for the sake of brevity, the complete procedure must be readily available to the operating employees for review. It is highly important that we not simply assume that the operating employee is wholly familiar with the repack procedure irrespective of his tenure on the job.

Corrections/changes, if needed, should be relayed through Regional Operations to Home Office.

IMPLEMENTATION

Each facility that engages in chemical repacking must implement the RIS program. Completed RIS forms have been provided to the regional offices for all the products repacked by their branches. (Some exceptions such as a blend or an oversight may exist, in which cases a request for a Repack Instruction Sheet should be made immediately.)

McKesson

Operations

Section	Reference	Page	End
REPACK	20.80	3	
Subject	Issue Date	Effective Date	
REPACK INSTRUCTION SHEET (RIS)	9/15/85	9/15/85	

IMPLEMENTA- TION (Cont.)

After the RIS is received by the Regional Safety and Operations Manager, any items not already filled in are completed. The extent of this completion may vary by region but, generally, it will include the front segment of the form beginning with the portion headed "Labels." (Except for product name, the first two rows are completed by the Service Center at the time a job ticket is prepared. The portion not completed by Home Office or the Region must be completed by the Service Center.)

The completed RIS becomes the "Master Copy" and is retained in the Service Center files until a job ticket is prepared, at which time the master copy is pulled and photocopied, returning the master copy to file. The final information, such as number of containers to be repacked, lot numbers, etc., needed to complete the instruction to the repack operator is obtained from the job ticket and entered on the RIS form.

The completed RIS is to be handed to the operator by the supervisor making certain that any referenced procedural information is attached or readily accessible. (The job ticket does not have to accompany the RIS, but remains with the supervisor for completion.)

The repack operator now has an opportunity to review these instructions, ask questions for clarification, reread his procedures, etc., before beginning the repack function.

Upon completion of the job, the repack operator is required to sign each RIS and comment on any irregularities, as well as the condition of safety and mechanical equipment. Any comment requiring correction or followup, must be promptly addressed by management and noted after corrective action has been completed.

A new RIS is to be submitted each time a job ticket is prepared. (Some repack of bulk dry products and/or compressed gases are excepted. See next page.) Remember, the RIS, in fact, constitutes written instructions to be given immediately prior to a repack function.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.80	4	X
Subject	Issue Date	Effective Date	
REPACK INSTRUCTION SHEET (RIS)	9/15/85	9/15/85	

RETENTION

When completed, the RIS is to be filed and retained with the Service Center copy of the job ticket for one year and then destroyed. Obviously, should an injury or litigation result from any specific repack job, it is important that the relevant RIS be retained until the situation is resolved.

DRY BULK
PRODUCTS/
COMPRESSED
GASES
REPACK

When the repack of bulk dry products or compressed gases is to occur, job tickets are sometimes prepared after the fact, or as convenience may dictate.

In such situations, a RIS should be prepared for each shift, and should remain at the repack station during that shift, so that it is available should there be an operator change during the shift. As an example, a RIS is prepared for filling chlorine cylinders. A job ticket may or may not be prepared, but a completed RIS is handed the beginning filling operator at the start of the shift. It is normal during the shift for one of the other chlorine workers to switch jobs with the filling operator to avoid boredom, thus the need to have the RIS available at the fill station. Both operators receive proper instruction, and both should complete and sign the comment section before it is returned at the end of their shift.

Repack Instruction Sheet

McKesson Chemical Company
Foremost-McKesson
Chemical Group



Date	Product	Lot No.
No. containers to be filled	Container	

Labels: Place labels in a neat manner as instructed.

McKesson	Supplier
Special label instructions	
DOT	Other

Stencil/Stamp

Calculate and stencil gross and tare weight

Net Weight	Lbs.	Kilos	Gallons	Liters
Product Name (DOT)				
Deposit \$	None Required —	Special Exemption Number	Hazard Identification Number	
Other				

Bung Seals Yes — No —	Type	Bung Type	Bung Gasket Type
Sampling			
Grounding Required Yes — No —	Flushing		
Part/Drum Package			
Fill Procedure			

O-400 (N 5-80)

Be alert. Work safely.

Safety and Health Information
on reverse side of this form.

McK00270

Safety/Health

Ventilation: Local Exhaust	Mechanical	Special
Respiratory Protection (Type)		
Eye Protection		
Protective Clothing		
Other Protective Equipment		
First Aid Procedure		
Principal Hazards		
Special Information		
Spill Control		

To Be Completed by Repacker

Safety Equipment Satisfactory Yes <input type="checkbox"/> No <input type="checkbox"/> If Not	Explain
Exhaust Equipment Satisfactory Yes <input type="checkbox"/> No <input type="checkbox"/> If Not	Explain
Mechanical Equipment Satisfactory Yes <input type="checkbox"/> No <input type="checkbox"/> If Not	Explain
Comments:	
(Signed)	Date
Above comments noted and action taken as follows:	
(Signed)	Date

REPACK INSTRUCTION SHEET LIST

Product Type: ACIDS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
A-01-a	Acetic Acid Glacial	A-16-a	Dodecyl Benzene Sulfonic
-b	Acetic Acid Solution	-b	Alkyl Benzene Sulfonic Acid
-02-a	Hydrochloric	-c	Calsoft LAS 99
-b	Muriatic	-17-a	Propionic Acid
-03-a	Nitric		
-b	Nitric, 40% or less		
-04-a	Phosphoric 85%		
-b	Phosphoric Solution		
-05-a	Polyphosphoric		
-06-a	Sulfuric		
-07-a	Hydrofluoric		
-08-a	Hydrofluosillicic 23-25%		
-09-a	Hydroxyacetic Technical 70%		
-10-a	Formic 85%		
-b	Formic Acid 90%		
-11-a	Boric Acid		
-12-a	Cresylic Acid		
-13-a	2-Ethylhexoic Acid		
-14-a	Oleic Acid		
-15-a	Sulfamic		

MKIL40422

MK094832

MKIL189423
McK00272

REPACK INSTRUCTION SHEET LIST

Product Type: ALCOHOLS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
L-01-a	Benzyl Alcohol N.F.	L-15-a	Alfol *14
-b	Benzyl Alcohol	-16-a	Alfol *1216
-02-a	n-Butyl Alcohol	-17-a	Ethanol, CD-19
-03-a	Isobutyl Alcohol	-b	Anhydrol *190
-04-a	sec-Butyl Alcohol	-c	Anhydrol *200
-05-a	Cyclohexanol	-d	Anhydrol *Solvent Special
-06-a	Isodecanol	-e	Synasol *190
-b	Decyl Alcohol	-f	Synasol *200
-07-a	Diactone Alcohol	-g	Synasol *Solvent Anhydrous
-08-a	2-Ethylhexanol	-h	Synasol *Solvent (PM-3224)
-09-a	Methanol	-i	Neosol *190
-10-a	Methyl Amyl Alcohol	-18-a	Propasol *Solvent P
-b	Methyl Isobutyl Carbinol	-19-a	P-Amyl Alcohol
-11-a	n-Propyl Alcohol	-20-a	Alfol *20
-12-a	Isopropyl Alcohol Anhydrous	-21-a	Yarmor*302/Pine Oil
-b	Isopropanol 91%	-22-a	Alfol *1618
-c	Isopropanol 99%	-23-a	Alfol *18
-d	Isopropanol 70% USP	-24-a	Nonyl Phenol
-e	Isopropanol 91% Refined		
-13-a	Alfol *8		
-14-a	Alfol *12		

REPACK INSTRUCTION SHEET LIST

Product Type: AMINES

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
M-01-a	Aminoethylethanolamine	M-19-a	N,N-Dimethylaniline
-02-a	Aniline	-20-a	Tetraethylenepentamine
-03-a	Diethanolamine	-21-a	Urea Solution
-04-a	Diisopropanolamine		
-05-a	Dimethylformamide		
-06-a	Monoethanolamine		
-b	Monoethanolamine 35%		
-07-a	Monoisopropanolamine		
-08-a	Morpholine		
-09-a	Triethanolamine		
-10-a	Mixed Isopropanolamines		
-11-a	Triisopropanolamine		
-b	Amine 12		
-12-a	Diethylenetriamine		
-13-a	Ethylenediamine		
-14-a	N-Methyl Diethanolamine		
-15-a	Diethylamine		
-16-a	Triethylamine		
-17-a	Cyclohexylamine		
-18-a	N-Methylpyrrolidone		

REPACK INSTRUCTION SHEET LIST

Product Type: ALDEHYDES/KETONES

<u>NUMBER</u>	<u>PRODUCT</u>
K-01-a	Acetone
-02-a	Cyclohexanone
-03-a	Diisobutyl Ketone
-04-a	Formaldehyde (37%)
-b	Formaldehyde (27%)
-05-a	Isophorone
-06-a	Methyl Ethyl Ketone
-b	Methyl Ethyl Ketone, refined
-07-a	Methyl Isobutyl Ketone
-b	Methyl Isobutyl Ketone, refined

REPACK INSTRUCTION SHEET LIST

Product Type: BASES

<u>NUMBER</u>	<u>PRODUCT</u>
B-01-a	Ammonia, anhydrous
-b	Aqua Ammonia, 26° BL
-c	Aqua Ammonia, 25%
-02-a	Caustic Potash Liquid 45%
-03-a	Caustic Soda Beads
-b	Caustic Soda Liquid 50%
-c	Caustic Soda Liquid 10%
-d	Caustic Soda Liquid 25%
-e	Caustic Soda Liquid 20%
-f	Caustic Soda Liquid 30%

REPACK INSTRUCTION SHEET LIST

Product Type: BLENDS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
X-01-a	Electronic Stripper	X-06-a	Linsco Blend #3
-b	Xerox Stripper X	-b	Sanbar Blend
-c	IBM Solvent	-07-a	McKesson Flux Remover
-d	PR Stripper Blend	-b	Kester Solder
-e	Special Blend #45	-c	Perk-Butanol Blend
-f	Technic Blend	-d	Sanbar Solvent #60
-g	Photo Circuits Stripper Blend	-08-a	Reducer 69
-h	McKSolv 8529	-b	Aromatic/Ketone Blend
-02-a	Mobil Chemical Blend	-c	Crown Cork 1373 Blend
-03-a	Linsco Blend #2	-e	Plate Wash
-04-a	General Cable Safety Solvent	-f	Xylene/Diacetone Alcohol
-b	111-Methylene Chloride Blend	-g	Alumax #2
-c	McKSolv 1315	-h	Fabronic Blend
-d	Allied Tube Safety Solvent	-i	Vinyl Blend
-e	Swiss Blend #1	-j	Press Lacquer Thinner
-f	McKSolv 17	-k	T-Blend
-g	McKSolv 32	-l	MEK - Toluol 50/50
-05-a	C&S Chemical-69 Thinner Blend	-m	Paraffin Solvent
-b	S&W 120 Thinner	-n	Magnetic Products Blend
-c	McKSolv 14	-o	Paraffin Solvent #2
		-p	Airstream Blend

REPACK INSTRUCTION SHEET LIST

Product Type: BLENDS (Cont.)

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
X-08-q	McKSolv 2	X-14-a	Owens Corning Blend
-r	McKSolv 15	-b	Cold Cleaner 120
-s	McKSolv 24	-c	McKSolv 7
-t	McKSolv 29	-15-a	CODO Blend
-u	Aerochem Blend	-b	Phenolic Blend
-09-a	Xylene/n-Propanol Blend	-16-a	Alcohol Blend
-b	McKSolv 4	-b	Slow Blend
-c	McKSolv 49	-c	McKSOLV ^R 218
-10-a		-d	4-TCB/Methanol Blend
-11-a		-e	McKSolv 805
-12-a	Concentrate Stripper Blend	-f	McKSolv 820
-b	McKSolv 1050	-g	Methanol/Acetate Blend
-c	McKSolv 10	-h	Blend E
-13-a	Fracmaster #1 Blend	-i	McKSolv 21
-b	Aircraft Engine Additive	-j	McKSolv 43
-c	D. Alkins Blend	-k	McKSolv 41
-d	Methanol/Water Blend	-l	McKSolv 45
-e	Viratek Blend	-17-a	Acetate Blend
-f	Toyota Blend #1	-b	Olin 80/20
-g	Conrail Blend	-c	McKSolv 22
-h	Aircraft Engine Supplement		

REPACK INSTRUCTION SHEET LIST

Product Type: BLENDS (Cont.)

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
X-18-a	Chacon #17	X-23-a	Blend MCN-106
-b	Blend MCN-101	-b	Fram Blend #2
-c	XL Blend	-c	Abco Developer Blend
-d	Chacon #27	-d	McKSolv 1
-e	N & M Solvent	-e	McKSolv 8
-f	Rexart Blend #938	-24-a	CSMS Blend
-g	Sparks M.S. Solvent	-b	EMC 13 Special Blend
-h	Leisure Time Blend	-c	Rexart XK-200
-i	McKSolv 815	-d	Penetone M.S. Blend
-j	Styrene/Polystyrene Mixture	-e	Rexart 1000 Wash
-k	McKSolv 39	-f	Rexart XK-141
-19-a	Blend MCN-103	-g	EMC 98 Blend
-20-a	Epoxy Thinner	-h	Solvent Blend NTB
-b	Coatings Blend A	-i	Blend MN-TTP
-c	M-T-M	-j	Blend A
-d	Union * R-306	-k	MN-MT Blend
-21-a	Del Mar #4 Blend	-l	AMF Blend SS
-22-a	Sherer Paint Stripper	-m	Safety Solvent #4
		-n	General Dynamics Safety Solvent

REPACK INSTRUCTION SHEET LIST

Product Type: BLENDS (Cont.)

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
X-24-o	McKSolv 18	X-33-a	Dubois HI Alk
-p	Sanbar #61	-b	HI-Alk Blend
-q	Grumman #1	-c	TC Bottle Wash
-r	Floken #3	-d	Mixed Descaling Salt
-s	McKSolv 36	-34-a	Sparks SG-34 Blend
-25-a	FMC Blend #2	-35-a	Belden Blend #1
-26-a	Clorox Solvent/Surfactant Blend	-36-a	Kardex Dry Mixture
-27-a	Lacquer Thinner 28-X		
-b	E-Z Prep Liquid Sandpaper #4		
-c	Electrostatic Cleaner K059		
-d	Whittaker B3C47 Blend		
-28-a	Ford Stripper Blend M5B 244A		
-29-a	Blend 291		
-30-a	Cleaner MCJS		
-31-a	Sohio Silicone Blend		
-b	Defoamer 71		
-c	McKSolv 28		
-32-a	Stearic Acid Flux		

REPACK INSTRUCTION SHEET LIST

Product Type: CHLORINATED HYDROCARBONS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
C-01-a	Carbon Tetrachloride	C-06-d	Triclene * D
-02-a	Ethylene Dichloride	-e	Trichloroethylene MDG
-03-a	Methylene Chloride	-f	Trichloroethylene Refined
-b	Aerotherne * MM	-07-a	Dowclene * EC
-c	Methylene Chloride Refined	-b	EC BLEND
-04-a	Perchloroethylene	-08-a	Ortho-Dichlorobenzene
-b	Perchloroethylene SVG	-09-a	Trichlorobenzene
-c	Dowper * Golden CS Solvent	-10-a	Halso 99
-d	Dowper CS Solvent	-11-a	Freon * TF Solvent
-e	Perchloroethylene Refined	-b	McKSolv * TF
-05-a	1,1,1-Trichloroethane	-12-a	Freon * TA Solvent
-b	Aerotherne * TT	-13-a	Freon * TE Solvent
-c	Chlorothene * Ind.	-14-a	Freon * TES Solvent
-d	Chlorothene * NU	-15-a	Freon * TMC Solvent
-e	Chlorothene * VG	-b	McKSolv * TMC
-f	Chlorothene * SM Solvent	-16-a	Freon * TMS Solvent
-g	Solvent 1,1,1	-17-a	Propylene Dichloride
-h	1,1,1-Trichloroethane Refined	-18-a	Freon * T-E 35
-06-a	Trichloroethylene	-19-a	Freon * T-P 35
-b	Hi-Tri *	-b	McKSolv TP 50
-c	Neu-Tri	-c	Freon * T-P 10
		-20-a	Chloroform

REPACK INSTRUCTION SHEET LIST

ESTERS/ANHYDRIDES/PHthalATES

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
N-01-a	Acetic Anhydride	N-16-a	n-Propyl Acetate
-b	Acetic Anhydride Mixture	-17-a	Tetrahydrofuran
-02-a	Primary Amyl Acetate	-18-a	Span * 20
-03-a	n-Butyl Acetate	-19-a	Organosilicone Fluid L-45
-04-a	Butyl Benzoate	-20-a	K-Flex DP
-05-a	Dibutyl Phthalate	-21-a	Glycol Ether PMA
-b	Flexol Plasticizer DBP	-b	Dowanol PMA
-06-a	Diisodecyl Phthalate	-22-a	Plasticizer DBS (Dibutyl Sebacate)
-07-a	Dioctyl Phthalate		
-b	Flexol Plasticizer DOP		
-08-a	Ethyl Acetate 99%		
-b	Ethyl Acetate		
-09-a	Isobutyl Acetate		
-10-a	Isopropyl Acetate		
-11-a	Butyl Cellosolve ^R Acetate		
-12-a	Carbitol ^R Acetate		
-13-a	Cellosolve ^R Acetate		
-14-a	Methyl Cellosolve ^R Acetate		
-15-a	Butyl Carbitol ^R Acetate		

REPACK INSTRUCTION SHEET LIST

Product Type: GLYCOL

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
G-01-a	Ambitrol *CN	-09-a	Glycerin USP
-b	Ambitrol * FL	-b	Glycerin, Technical
-02-a	Diethylene Glycol	G-10-a	Carbowax * 200
-03-a	Dipropylene Glycol	-b	Polyglycol E-200
-04-a	Ethylene Glycol	-11-a	Carbowax * 300
-b	Dowtherm * SR-1	-b	Poly-G *300
-c	UCAR * Aircraft Deicing Fluid II, PM 5178	-12-a	Carbowax * 400
-d	UCAR * Thermafluid 17	-b	Poly-G * 400
-e	Permanent Antifreeze	-c	Polyglycol E-400
-f	UCAR Aircraft Deicing Fluid II, PM 5234	-13-a	Carbowax * 600
-g	Dow Aircraft Deicing Fluid 146 AR	-14-a	Carbowax * 1000
-h	Hydraulic System Fluid, WGF 200D	-15-a	Carbowax * 1500
-05-a	Hexylene Glycol	-16-a	Pluronic * L-31
-06-a	Propylene Glycol, Techn.	-b	Pluronic * L-61
-b	Dowfrost * Ind.	-c	Pluronic * L-62
-c	Propylene Glycol USP/FCC	-d	Pluronic * L-64
-d	UCAR * Foodfreeze 35	-e	Pluronic * L-101
-07-a	Triethylene Glycol	-17-a	Ployglycol 15-200
-b	Getty Blend	-18-a	Polypropylene Glycol
-08-a	Tripropylene Glycol	-19-a	Sorbitol 70% USP
		-b	Polyol P
		-20-a	1,3 Butylene Glycol

REPACK INSTRUCTION SHEET LIST

Product Type: GLYCOL ETHERS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
GE-01-a	Dowanol * DB Diethylene Glycol Butyl Ether	GE-06-a	Dowanol * EE Ethylene Glycol Ethyl Ether
-b	Butyl Carbitol *	-b	Cellosolve * Solvent
-c	Glycol Ether DB	-c	Poly-Solv * EE
-02-a	Dowanol * DE Diethylene Glycol Ethyl Ether	-d	Glycol Ether EE
-b	Carbitol * Solvent	-07-a	Dowanol * EM Ethylene Glycol Methyl Ether
-c	Glycol Ether DE	-b	Methyl Cellosolve
-03-a	Dowanol * DM Diethylene Glycol Methyl Ether	-c	Poly-Solv * EM
-b	Methyl Carbitol	-d	Glycol Ether EM
-c	Poly-Solv * DM	-08-a	Dowanol * EPH Ethylene Glycol Phenyl Ether
-d	Glycol Ether DM	-b	Glycol Ether EPH
-04-a	Dowanol * DPM Dipropylene Glycol Methyl Ether	-09-a	Dowanol * PIBT Propylene Glycol Iso-butyl Ether Higher Homologs
-b	Poly-Solv * DPM	-10-a	Dowanol * PM Propylene Glycol Methyl Ether
-c	Dowanol DPM SG	-b	Dowtherm*209 Full Fill/Coolant
-d	Glycol Ether DPM	-11-a	Dowanol * TPM Tripropylene Glycol Methyl Ether
-05-a	Dowanol * EB Ethylene Glycol Butyl Ether	-b	Glycol Ether TPM
-b	Butyl Cellosolve	-12-a	Dalpad * A Aromatic Glycol Ether
-c	Poly-Solv * EB	-13-a	Propasol * Solvent B
-d	Butyl Oxitol *		
-e	Glycol Ether EB		

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REPACK INSTRUCTION SHEET LIST

Product Type: GLYCOL ETHERS

<u>NUMBER</u>	<u>PRODUCT</u>
GE-13-b	Propasol * Solvent P
-c	Propasol * Solvent DM
-14-a	Dowfroth * 1012 - D Flotation Frother
-15-a	Dowanol PPH
-16-a	Ethoxytriglycol
-17-a	Glycol Ether DE-SG

REPACK INSTRUCTION SHEET LIST

Product Type: HYDROCARBONS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
H-01-a	Diisobutylene	H-09-g	Shell Sol 71
-02-a	Heptane	-h	Shell Sol 320
-03-a	Hexane	-10-a	Turpentine
-b	Shell Sol B	-b	Kerosene
-04-a	Styrene Monomer	-11-a	Mineral Spirits
-05-a	Toluene	-b	Espesol 300S
-06-a	Xylene	-12-a	Lactol Spirits
-07-a	Naptha VM&P	-b	Tolu-Sol 6
-b	Naptha 200-235	-c	Tolu-Sol 19EC
-08-a	Cyclosol #53 (Shell)	-13-a	Mineral Oil
-b	Panasol AN-3	-b	McKessol 8530
-c	Aromatic 150	-c	Sontex 85
-d	McKSolv PX-2	-d	Sontex 350
-e	Aromatic 100	-e	White Mineral Oil 70 USP
-f	Cyclosol 63	-f	White Mineral Oil 90 USP
-g	Magnus 3510	-g	White Mineral Oil 200 USP
-09-a	Shell Sol 140	-h	White Mineral Oil 350 USP
-b	Shell Sol 72	-15-a	Polyvis * 10 SH
-c	Shell Sol 340	-b	Polyvis * 30
-d	Shell 460 Solvent	-c	Polyvis * OSH
-e	LPA Solvent	-16-a	Cosdenol 104
-f	McKSolv 140F	-17-a	Union * R-211

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REPACK INSTRUCTION SHEET LIST

Product Type: HYDROCARBONS

<u>NUMBER</u>	<u>PRODUCT</u>
H-18-a	Poly EM-40
-b	Poly EM-20
-19-a	Therminol * 66
-b	Therminol 55
-20-a	Alphasize 20
-21-a	McKSolv PX-1
-22-a	Tamol 850

REPACK INSTRUCTION SHEET LIST

Product Type: INORGANIC SALTS

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
I-01-a	Aluminum Sulfate	I-16-a	Ammonium Nitrate Sol. 50%
-02-a	Ammonium Thiosulfate	-17-a	Sodium Nitrate
-03-a	Diethyl Sulfate	-18-a	Sodium Tripolyphosphate
-04-a	Ferric Chloride	-19-a	Monocalcium Phosphate
-05-a	Magnesium Chloride		
-06-a	Titanium Tetrachloride		
-07-a	Sodium Nitrite Sol.		
-08-a	Sodium Silicate Sol.		
-b	Sodium Metasilicate		
-c	Sodium Silicate F		
-09-a	Sodium Hypochlorite Solution		
-b	Liquid Bleach		
-10-a	Calcium Chloride Sol.		
-11-a	Sodium Hexametaphosphate Sol. 30%		
-b	Sodium Hexametaphosphate Sol. 45%		
-12-a	Soda Ash		
-13-a	Sodium Sulfate		
-14-a	Boric Acid		
-15-a	Borax 5 Mol		

REPACK INSTRUCTION SHEET LIST

Product Type: MEC MIXTURES

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
Z-01-a	AP-62	Z-09-d	Atlas Medium Slow Lacquer Thinner A5789
-b	McKSolv Fiberclean	-e	Atlas Slow Lacquer Thinner
-02-a	AP-73	-f	Atlas Mask Wash Thinner 9A5005
-b	AP-73R	-g	Atlas Stripping Thinner 9A5001
-03-a	AP-82	-h	Atlas Lacquer Thinner 9A5011
-b	AP-82S	-i	Atlas Medium Lacquer Thinner 9A5014
-c	McKSolv Flushsolv #6	-10-a	Atlas Fast Dry Enamel Reducer 9A5761
-d	McKSolv EPS	-b	Atlas Medium Enamel Reducer 9A5745
-04-a	AP-500RS	-11-a	Atlas Wax & Grease Remover 9A5835
-b	McKSolv Colsol	-12-a	Atlas Synthetic Enamel Reducer 9A5714
-c	McKSolv Fluxsolv	-13-a	Atlas Retarder 9A5008
-05-a	Stock Thinner	-14-a	Atlas Lacquer Thinner Slow Reducer 9A5729
-06-a	AP-170	-15-a	McKSolv TX
-b	AP-205B		
-07-a	Cycle Solv 60		
-b	Cycle Solv 99		
-08-a	McKSolv CBS		
-09-a	Atlas Fast Dry Lacquer Thinner 9A5700		
-b	Atlas Medium Fast Lacquer Thinner 9A5777		
-c	Atlas Medium Lacquer Thinner 9A5803		

REPACK INSTRUCTION SHEET LIST

<u>NUMBER</u>	<u>PRODUCT</u>
E-01-a	Versene * 80
-b	Versene * 100
-c	Sequestrene 30A
-d	Vertan * 650
-02-a	Versenex * 80
-03-a	Versenol * 120
-b	Sequestrene Chel DM-41
-04-a	Sodium Xylene Sulfonate 40%
-05-a	Tricresyl Phosphate
-b	Triaryl Phosphate
-06-a	Tributoxyethyl Phosphate
-07-a	UC* Silicone Emulsion LE-458
-08-a	SAG-10
-09-a	Aero 801 Promoter
-10-a	Sequestrene NH ₄ Fe
-11-a	Tamol 731 25%

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REPACK INSTRUCTION SHEET LIST

Product Type: PEROXIDES

<u>NUMBER</u>	<u>PRODUCT</u>
P-01-a	Cumene Hydroperoxide
P-02-a	Hydrogen Peroxide
-b	Albone
-c	Hydrogen Peroxide 31 Reagent Grade

REPACK INSTRUCTION SHEET LIST

Product Type: SURFACTANTS, ANIONIC

<u>NUMBER</u>	<u>PRODUCT</u>
SA-01-a	Dowfax *2A1
-02-a	Dowfax *3B2
-03-a	Neodol *25-3A
-04-a	Neodol *25-3S
-05-a	Triton *H-66
-06-a	Sodium Lauryl Sulfate
-07-a	Triton GR-5M
-08-a	Triton X-200
-09-a	Niaproof 08

REPACK INSTRUCTION SHEET LIST

Product Type: SURFACTANTS, NONIONIC

<u>NUMBER</u>	<u>PRODUCT</u>	<u>NUMBER</u>	<u>PRODUCT</u>
SN-01-a	Neodol * N-23	SN-06-a	Tergitol * 15-S-3 (UC)
-b	Neodol * N-25	-b	Tergitol * 15-S-5
-c	Neodol * 91	-06-c	Tergitol * 15-S-7
-c	Neodol * 25	-d	Tergitol * 15-S-9
-02-a	Neodol * 25-3	-e	Tergitol * 15-S-12
-b	Neodol * 25-7	-07-a	Tergitol * 25-L-7
-c	Neodol * 25-9	-b	Tergitol * 25-L-9
-d	Neodol * 25-12	-08-a	Tergitol * NP-4
-03-a	Neodol * 91-2.5	-b	Tergitol * NP-9
-b	Neodol * 91-6	-c	Tergitol * NP-10
-c	Neodol * 91-8	-d	Tergitol * NP-14
-04-a	Poly-Tergent * B-150 (Olin)	-e	Tergitol * NP-27
-b	Poly-Tergent * B-300	-f	Tergitol * NP-35
-c	Poly-Tergent * B-305	-g	Tergitol * NP-X
-d	Poly-Tergent * B-350	-h	Tergitol * NP-6
-e	Poly-Tergent * J-200	-09-a	Tergitol * TMN-6
-05-a	Poly-Tergent * S-405 LF	-b	Tergitol * Min-Foam 2X
-b	Poly-Tergent * SL-42	-10-a	Triton * N-57 (R&H)
-c	Poly-Tergent * SL-62	-b	Triton * N-60
-d	Poly-Tergent * SL-92	-c	Triton * N-101

REPACK INSTRUCTION SHEET LIST

Product Type: SURFACTANTS, NONIONIC Cont.)

<u>NUMBER</u>	<u>PRODUCT</u>
SN-10-d	McKWet 95N
-e	Alpha 4040
-11-a	Triton * X-35
-b	Triton * X-45
-c	Triton * X-100
-d	Triton * X-102
-e	Triton * X-114
-f	Triton * X-202
-g	Triton * X-207
-h	Triton * X-405
-i	Triton * X-705
-j	LMSO
-k	Triton X-305
-l	Triton X-165
-12-a	Alfonic * 1412-40
-13-a	Plurafac * RA-20
-14-a	Triton DF-12

McKesson Operations

Section	Reference	Page	End
REPACK	20.81	1	X
Subject	Issue Date	Effective Date	
TRANSFER OF CHEMICAL PRODUCTS	6/30/86	6/30/86	

POLICY

1. There must be two active participants in any bulk loading/unloading or product repackaging, including transfers occurring during the weekend.
2. Participants, including truck drivers, MUST have visual contact with and be accessible to the transfer process to facilitate emergency response.
3. If the transfer involves products loading/unloading packaged freight, it is permissible to have only one active participant.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.10	1	X
Subject	Issue Date	Effective Date	
REPACKING - DEFINITION	9/15/85	9/15/85	

DEFINITION

A major portion of our efforts in the value-added distribution of chemicals involves the purchasing of products in bulk and repackaging these materials into smaller packages for end use by our customers. Because of government regulations, company liabilities, and need for protection of our employees, it is necessary to exercise various controls on repackaging, for example, the Request for Approval to Repackage, etc. To ensure understanding, the following is how McKesson defines "repackaging."

1. Transfer from bulk to any container, either at our plant or at our customer's plant.
2. Subdivision of any container to smaller ones.
3. Custom packaging by anyone into our containers or with the McKesson label.
4. Specification of blank labeling or other labeling on orders to suppliers.
5. Use of any trade mark or trade name on either our own labels or labels furnished by the supplier.
6. Removal or alteration of supplier's label for any purpose, such as, coding or adding any labeling requested by our customer.
7. Any modification by dilution, by addition of other materials, by compounding or mixing, or by other manipulation in any way.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.20	1	
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

GENERAL

A sample, properly and safely obtained, correctly labeled and stored, is our only defense against the very real and growing threat of potential claims alleging that our bulk or repackaged products might be defective. Associated with any correctly administered sampling program are relatively small, finite costs in time, labor and materials. However, these costs seldom exceed those of a poorly run program. A poorly run program is like an almost empty fire extinguisher in that you have a false sense of security but very little real protection. Ultimately, your sampling program is another and very effective form of liability insurance, one you literally can not afford to do without.

In order to administer your sampling program properly you must keep in mind that it must be an absolute, consistent, all-or-nothing program. Any program that is 98% complete is just another form of liability Russian roulette.

Therefore, each and every inbound and outbound bulk shipment, as well as every repackaging run, must be properly sampled. If a tanktruck has multiple compartments, each individual compartment must be sampled even if more than one, or even all, contain the same product.

SCOPE

This procedure does not apply to compressed gases, food grade products or other products with physical properties intrinsically too hazardous to sample, such as Hydrofluoric Acid. (Contact your Area Operations Manager if you have any questions about product suitability for sampling, particularly for new products.)

McKesson
Operations

Section	Reference	Page	End
REPACK	20.20	2	
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

MATERIALS

1. Technical Information

For each product your Service Center handles that may need to be sampled, technical information about the chemical and physical properties, as well as the physiological risk factors, must be on hand. If not, get this information promptly and make sure it is stored correctly so that it remains readily available for use. Sources include, but are not limited, to the following:

MSDS - Material Safety Data Sheets.

RIS - Repack Instruction Sheets, especially the Safety/Health section on the top of the back page.

Labels - NFPA Hazard Warnings

Technical Bulletins and other literature, both from suppliers and trade sources such as CMA (Chemical Manufacturers' Association), and occasionally from regulatory agencies themselves such as USEPA, USDOT, and OSHA.

2. Personal Protective Equipment

As required for safe handling and specified in the literature listed above. If there is any conflict between a RIS and any other source of technical information, comply with the RIS requirements for they are Company Policy.

No short-cuts here are ever permitted! Ever!

3. Sampling Equipment

a. Containers and Seals (See Ex. 1)

Varies with product; common sense rules apply.

Section	Reference	Page	End
REPACK	20.20	3	
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

MATERIALS
(Cont.)

NOTE: As analytical instruments have become increasingly more automatic, sophisticated and precise, the volume of sample material required for a reliable sample has declined dramatically. We used to deal in pints and quarts; now, either 4 oz. or 8 oz. samples do just as well.

b. Labels (See Ex. 1)

Sample bottles will be labeled with a hazard warning label which includes, at least:
NFPA warning
Supplier name
Batch number
Date of sampling.

c. Samplers or Thieves (See Ex. 1)

Must be inert or non-reactive with the material to be sampled and easy to clean; if mechanical in operation, they must be reliable with a positive shut-off control.

PROCEDURES

Two general principles:

First, know the product. An intimate knowledge of the product that has the potential to harm you is still the best form of protection.

Second, know the procedure. Sampling, like many other operational procedures, must be done properly in order to rely on the information it yields.

Some specific rules:

1. Like repackaging, sampling should never be performed by either unqualified individuals or by an individual working alone.
2. ALWAYS leave ullage (outage, or vapor space) in the sample container; NEVER fill a sample container liquid full.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.20	4	
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

PROCEDURES
(Cont.)

3. Labels should be completed neatly and applied promptly to avoid errors in accountability.
4. Any time weather conditions or mechanical conditions prevent routine sampling procedures, alternate procedures must be devised to prevent damage to equipment or exposure of our workers to unnecessary physical risk. Consult your Area Operations Manager if either of these circumstances should arise.

Sampling Bulk Movements:

1. In addition to the rules above, the sample container itself should be rinsed in the product to be sampled to ensure that no contaminants are present. Simply pour the rinsate back down the hatch, then proceed with the filling of the sample container.
2. To obtain a homogeneous sample of certain products of variable or high viscosity, take portions from different levels within the compartment, and make a composite or cross-sectional retained sample of small portions from various levels.
3. Whenever direct sampling through the hatch is impossible or unsafe, a retained sample may be withdrawn from the unloading line. This procedure has the potential for excess spillage, so it must be executed very carefully and precisely, and only after sufficient product has passed through the line to insure that the stream being sampled is free of residual contaminants that may have been present in the unloading line itself. One way to accomplish this would be to wait until all the product was unloaded and no further liquid was flowing, then "crack" one of the connection points in the line and use that seepage to fill the sample container. Obviously, a drip pan should be used at the sample point to contain any excess seepage.

Section	Reference	Page	End
REPACK	20.20	5	
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

PROCEDURES
(Cont.)

Sampling Repackaged Products

1. In addition to the rules above, all repack samples must be composite samples drawn from the second and one of the last five drums filled. A retained repack sample must be secured for each NIPO (job ticket).
2. Again, the container itself must be rinsed in the product being sampled. Apply the same procedures as above except that the rinsate is poured back into the drum.

LABELING

Permanent heavy-duty labels only are to be used. All marking must be done legibly with permanent ink to prevent fading or running. The lot number is derived from the purchase order or work order depending upon type.

RETENTION

Retention Periods

Bulk shipments	3 months
Repack --	
Acids, Alkalis	3 months
All others	6 months

Retention Conditions

A closed, lockable container with adequate ventilation is best. Obviously, it must be inert to the sample material stored within. Interior heated storage is best to prevent product deterioration due to low ambient temperatures. Chronological control and product incompatibility demand that containers large enough to hold all retained samples be installed. The reduction in sample container size coupled with the reduction in retention periods means that most Service Centers should have enough physical space now. In almost every case, a Service Center with a "display-type" sample program excels in almost every other operational area, too. Those locations with shabby looking sample storage conditions almost invariably have poor samples stored therein and a host of other operational weaknesses without.

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REPACK	20.20	6	X
Subject	Issue Date	Effective Date	
SAMPLING PROCEDURE	9/15/85	9/15/85	

DISPOSAL

Samples that have aged beyond their prescribed retention periods may be added carefully to bulk shipments out of the same product, current drum production lots, or part drums.

Samples subject to deterioration, such as Caustic Soda or Formaldehyde, should always be added to outgoing bulk shipments to ensure their thorough mixing and restoration by the agitation of the truck movement.

All questions about aged sample disposal should be addressed to your Area Operations Manager. Disposal should never be done without supervision. This process deserves the same degree of caution and protection as the initial sample acquisition process.

Additional disposal guidelines may be found in Reference 10.10, Hazardous Waste Policy.

SAMPLING PROCEDURES

Sample Containers & Seals

Wheaton Scientific
1000 N. 10th Street
Millville, NJ 08332
(609) 825-1400, ext. 2659

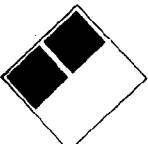
Smith Container Corp.
P.O. Box 240384
Charlotte, NC 28224

Package Supply & Equip.
P.O. Box 1508, Sta. B
Greenville, SC 29606

Many other national and local sources of supply too numerous to list.

Labels

Usually locally printed, see example below:

	_____
	Chemical

	Owner _____ Date _____

Samplers

Fisher Scientific
Model 14-209-52 is a good all-around thief
Various sales offices nationally

Other good samplers available at local dealers servicing the bulk liquids industry.

Operations

Section	Reference	Page	End
REPACK	20.30	1	
Subject	Issue Date	Effective Date	
CONTAINER LABELS	3/10/86	3/10/86	

GENERAL

It is the policy of McKesson Chemical Group that all products shipped or packaged will be properly labeled. There are to be no exceptions.

Recently, the Department of Transportation, the Department of Labor, and other government agencies have promulgated a complex maze of labeling regulations, stepped up enforcement activities, and increased penalties for violations. The following label procedures are designed to protect people handling the product, ensure regulatory compliance, forestall accidents, minimize liability claims, and control insurance and other costs.

McKesson Chemical Group has two types of drum labels available, standard labels and customized labels. Standard labels are inventoried at Advertising Distributors Company (ADC) and are available for immediate delivery to Service Centers. Exhibit 1 lists the standard McKesson Chemical labels and tags currently available through ADC. Exhibit 2 lists the McKesson EnviroSystems labels available.

Customized labels are not inventoried but are produced by McKesson Printing Services (MPS) in small quantities upon request. Customized labels are much more expensive than standard labels and should be used for emergencies or special applications only. For example, customized labels may be used for blends, for products infrequently packaged, or for specialty products. Exhibit 3 lists the customized labels currently available through MPS. The following procedure describes the label order process for each type of label.

No product labels may be printed or xeroxed locally.

Anticipate label usage and inventory for only about a 6-month supply. Use labels on a first-in, first-out basis.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.30	2	
Subject	Issue Date	Effective Date	
CONTAINER LABELS	3/10/86	3/10/86	

GENERAL
(Cont.)

The label text may change from time to time as a result of newly discovered information or regulatory changes. When revisions occur all Service Centers will be notified, and each Service Center must destroy its stock of obsolete labels in order to prevent their use on subsequent product shipments. Replacement labels will be available, either at ADC or as a customized label.

When labels are revised, the date of that revision will be shown in the lower left corner. The date shown in Exhibits 1, 2 and 3 will also be changed so the exhibits will always indicate the current label.

PROCEDURE
FOR
STANDARD
LABELS

1. Service Center initiates Purchase Order showing label title and number, quantity requested, and date needed and submits to Area Operations Manager.
2. Area Operations Manager approves Purchase Order and mails it to ADC.
3. ADC fills the order and returns the labels directly to the Service Center using the appropriate delivery service.
4. ADC invoices the Service Center directly for the labels and delivery charges. The invoice will be included in the label package as the packing list.

PROCEDURE
FOR
CUSTOMIZED
LABELS

1. The Technical Director, Home Office, is told that a customized label is needed, and he is given the customer and product's name, the container and net weight, the number of containers to be repackaged, and the expected date of repackaging.
2. The Technical Director will draft the label text specifically for the product in question. He will coordinate the printing of the required number of copies with McKesson Printing Services (MPS).

McKesson
Operations

Section	Reference	Page	End
REPACK	20.30	3	
Subject	Issue Date	Effective Date	
CONTAINER LABELS	3/10/86	3/10/86	

PROCEDURE
FOR
CUSTOMIZED
LABELS
(Cont.)

3. MPS will send the finished labels directly to the Service Center by Air UPS service. The finished labels will be at the Service Center within 5 working days of notification to Home Office.
4. MPS will invoice the Service Center directly for the labels and delivery charges. The invoice will be included as the packing list.
5. The Service Center must retain at least one label specimen, in addition to all other supporting documentation, in its files in the event of future product liability or quality concerns. MPS will also retain a specimen label referenced to the customer name.
6. All unused custom labels must be destroyed. These labels must not be used for any product other than the one for which they were designed.
7. To purchase an existing custom label from Exhibit 3:
 - a. Service Center initiates Purchase Order showing label title and number, quantity requested, and date needed and submits to Area Operations Manager.
 - b. Area Operations Manager approves Purchase Order and mails it to MPS.
 - c. MPS fills the order and returns the labels directly to the Service Center using the appropriate delivery service.
 - d. MPS invoices the Service Center directly for the labels and delivery charges. The invoice will be included in the label package as the packing list.

McKesson
Operations

Section	Reference	Page	End
REPACK	20.30	4	X
Subject	Issue Date	Effective Date	
CONTAINER LABELS	3/10/86	3/10/86	

DOT
REGULATED
LABELS

A supply of the various diamond-shaped 4" x 4" DOT labels should be maintained at each stocking location, even those which do not repackage. This will allow replacement of faded DOT labels or correction of a labeling error by another facility.

There are a number of sources for these labels. One is:

Labelmaster
6001 N. Clark Street
Chicago, IL 60660

STANDARD LABELS AND TAGS AVAILABLE

Labels are printed by Herlin Press, Inc. and stored by Advertising Distributors Co, 28 Railroad Ave, West Haven, CT 06516 (203) 933-2584, Mrs. Olly Lunde or Mr. Bob Mohr.

Invoices should be payable to Advertising Distributors Co.

NOTES ON PRODUCT LABELS

1. Those product names with (R) following the word must only be used with the supplier of that brand of product. The (R) represents a national trademark and its use with suppliers' products is covered by signed agreements. Deviations of this by accidental contamination or error violates our agreements with these suppliers and voids product liability coverage normally present.
2. The standard label size is 7 x 14. This size may be used on all sizes of drums and portable tanks.
3. A 6 x 12 label is available for selected corrosives. This label is to be used on 30 gallon deldrums.
4. 3 x 12 labels are used on 15 gallon Heinz nitric acid drums.
5. 6 x 14 tags are used on 8 ½ gallon nitric acid bombs only.
6. The standard color for McKesson Chemical labels is red. The standard color for McKesson Envirosystems labels is green.
7. Some McKesson Chemical labels are available in blue and some in green. These labels must be used with specific products only because they are associated with special product quality requirements. Green labels indicate fluorocarbons of Freon (R) quality. Blue labels indicate products meeting semi-conductor industry standards.

McKESSON CHEMICAL LABELS AND TAGS

<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>	<u>COMMENTS</u>
Acetic Acid, Glacial	A21-1D	0983	450	
Acetic Acid, 80%	A21-1E	1183	450	
Acetone	A22-1	1083	357	
Acetone, SEMI	A22-1S	0884	357	Blue Borders
Aircraft Deicing Fluid	A23-1	0284	500	
Ambitrol CN	A26-1	0184	519	
Ammonia Anhydrous 4 x 4 DOT Tag	A28T6	None	-	
Ammonia Anhydrous 3 x 5 Tag	A28T7	None	-	
Permanent Antifreeze	A29-1	0184	515	
Aqua Ammonia, 26° Be	A32-1C	0983	385	
Aqua Ammonia, 26° Be	A32-9C	0983	100	6 x 12 inch
Liquid Bleach, Ind. Grade	B23-1A	0983	500	Burlington only
Liquid Bleach, Ind. Grade	B23-1B	0684	Blank	Chattanooga only
Liquid Bleach, Ind. Grade	B23-1C	0983	550	Geismar only
Liquid Bleach, Ind. Grade	B23-1D	0983	550	Greensboro only
Liquid Bleach, Ind. Grade	B23-1E	0983	550	Kansas City only
Liquid Bleach, Ind. Grade	B23-1F	0983	550	Omaha only
Liquid Bleach, Ind. Grade	B23-1G	0684	Blank	Phoenix only
Liquid Bleach, Ind. Grade	B23-1H	0983	550	San Francisco only
Liquid Bleach, Ind. Grade	B23-1I	0983	550	Santa Fe Springs only
Liquid Bleach, Ind. Grade	B23-1J	0983	550	Spartanburg only
Liquid Bleach, Ind. Grade	B23-1K	0983	550	St. Louis only
Liquid Bleach, Ind. Grade	B23-1L	0983	550	Tampa only
Liquid Bleach, Ind. Grade	B23-1M	0983	550	Wichita only
Liquid Bleach, Ind. Grade	B23-9B	0684	Blank	6 x 12 inch Chattanooga only
Liquid Bleach, Ind. Grade	B23-9D	0684	Blank	6 x 12 inch Greensboro only
Liquid Bleach, Ind. Grade	B23-9J	0684	Blank	6 x 12 inch Spartanburg only
Liquid Bleach, Ind. Grade	B23-9L	0684	Blank	6 x 12 inch Tampa only
n-Butyl Acetate	B25.5-1	1083	402	
n-Butyl Acetate, SEMI	B25.5-1S	0884	402	Blue Borders
n-Butyl Alcohol	B26-1	1083	374	
sec-Butyl Alcohol	B27-1	0184	369	
Butyl Carbitol	B28-1	1183	440	
Butyl Cellosolve	B29-1	1183	415	
Butyl Cellosolve Acetate	B30-1	0184	432	
Carbitol Solvent	C23-1	0184	450	
Caustic Potash 45%	C29-1B	0983	660	
Caustic Potash 50%	C29-1D	1285	660	
Caustic Potash 45%, FCC	C29-1E	0286	660	
Caustic Soda 50%	C30-1B	0983	680	
Caustic Soda Beads	C30-1C	0983	500	

McKESSON CHEMICAL LABELS AND TAGS

<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>	<u>COMMENTS</u>
Caustic Soda 50%, Rayon	C30-1D	0286	680	
Caustic Soda 50%	C30-9B	1285	350	6 x 12 inch
Cellosolve Acetate	C31-1	1284	445	
Cellosolve Solvent	C32-1	1284	425	
Chlorine 4 x 4 DOT Tag	C38T6A	None	-	
Chlorine 4 x 4 EPA Tag	C38T7	1080	-	
Chlorothene VG	C40-1	1183	592	
Cyclohexanone	C48-1	1183	436	
Diacetone Alcohol	D21-1	0184	432	
Dibutyl Phthalate	D22-1	0184	470	
Diethanolamine 99%	D22.5-1A	1183	480	
Diethanolamine 85%	D22.5-1B	1183	480	
Diethylene Glycol	D23-1	1183	520	
Di-(2-Ethylhexyl)phthalate	D24-1	0384	450	
Dimethylformamide	D25-1	0184	430	
Dowanol DB	D27-1A	1183	440	
Dowanol EB	D27-1B	1183	415	
Dowanol EPH	D27-1D	0184	505	
Dowanol TPM	D27-1E	0184	445	
Ethyl Acetate 99%	E21-1A	0184	409	
Ethyl Acetate 85-88%	E21-1B	0184	401	
Ethylene Dichloride	E24-1	0184	573	
Ethylene Glycol	E25-1C	1183	519	
EDTA Chelating Agent	E26-1	1184	600	
Ferric Chloride 42°	F21-1	0184	600	
Formaldehyde Solution, 37%	F24-1	1183	490	
Formic Acid 90%	F25-1	1183	533	
Freon TF	F27-1	0184	690	Green Borders
Freon TA	F27-2	0184	630	Green Borders
Freon TE	F27-3	0184	690	Green Borders
Freon TES	F27-4	0184	690	Green Borders
Freon TMC	F27-5	0184	630	Green Borders
Freon TMS	F27-6	0184	650	Green Borders
Freon TP-10	F27-7	0184	630	Green Borders
Freon TP-35	F27-8	0184	525	Green Borders
Glycerin, Technical	G23-1A	1183	570	
Glycerin, 96%, USP	G23-1B	1183	570	
Glycerin, 99.5%, USP	G23-1C	1183	570	
Natural Glycerin, 96%, USP	G23-1D	1183	570	
Natural Glycerin, 99.5%, USP	G23-1E	1183	570	
Glycol Ether DB	G25-1	1183	440	
Glycol Ether PM	G25-10	0184	420	
Glycol Ether TPM	G25-11	0184	445	
Glycol Ether DE	G25-2	0184	450	
Glycol Ether DM	G25-4	0184	470	

McKESSON CHEMICAL LABELS AND TAGS

<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>	<u>COMMENTS</u>
Glycol Ether DPM	G25-5	1183	435	
Glycol Ether EB	G25-6	1183	415	
Glycol Ether EE	G25-7	1284	425	
Glycol Ether EM	G25-8	1284	440	
Glycol Ether EPH	G25-9	0184	505	
Hexylene Glycol	H21-1	1183	427	
Hydrochloric Acid 18°	H22-1A	0983	500	
Hydrochloric Acid 20°	H22-1B	0983	500	
Hydrochloric Acid 22%	H22-1C	0983	520	
Hydrochloric Acid 18°	H22-9A	0983	140	6 x 12 inch
Hydrochloric Acid 20°	H22-9B	0983	140	6 x 12 inch
Hydrofluosilic Acid	H24-1	0184	500	
Hydrofluosilic Acid	H24-9	0983	150	6 x 12 inch
Hydrogen Peroxide 31% Reagent	H25-1	1285	480	
Hydrogen Peroxide 35%	H25-2	0184	500	
Hydrogen Peroxide 50%	H25-3	0184	500	
Hydroxyacetic Acid	H26-1	1183	550	
Hydrogen Peroxide, 35%	H27-1	1285	500	
Hydrogen Peroxide, 35%, Cosmetic	H27-1A	1285	500	
Hydrogen Peroxide, 35%, Food	H27-1B	1285	500	
Hydrogen Peroxide, 35%, Cosmetic	H27-9A	1285	275	6 x 12 inch
Hydrogen Peroxide, 35%, Food	H27-9B	1285	275	6 x 12 inch
Hydrogen Peroxide, 50%	H28-1	1285	500	
Hydrogen Peroxide, 50%, Cosmetic	H28-1A	1285	500	
Hydrogen Peroxide, 50%, Food	H28-1B	1285	500	
Hydrogen Peroxide, 50%, Cosmetic	H28-9A	1285	275	6 x 12 inch
Hydrogen Peroxide, 50%, Food	H28-9B	1285	275	6 x 12 inch
Isobutyl Acetate	I21.5-1	1083	397	
Isopropanol Technical	I22-1B	1083	355	
Isopropanol, ACS/NF	I22-1D	1083	355	
Isopropanol, 70%, USP	I22-1E	0984	401	
Isopropanol, SEMI	I22-1S	0884	355	Blue Borders
McKSolv FICC	M23-1	1284	604	Green Borders
McKSolv TP-50	M24-1	1284	465	Green Borders
Methanol	M26-1	1083	358	
Methanol, SEMI	M26-1S	0884	358	Blue Borders
Methyl Cellosolve	M28-1	1284	440	
Methylene Chloride	M29-1	1183	600	
Methyl Ethyl Ketone	M30-1	1083	366	
Methyl Ethyl Ketone, SEMI	M30-1S	0884	366	Blue Borders
Methyl Amyl Alcohol	M30.5-1	1183	371	old name: Methyl Isobutyl Carbinol
Methyl Isobutyl Ketone	M31-1	1083	366	
Mineral Spirits	M34.5-1	1183	350	
Monoethanolamine	M35-1	0983	460	

McKESSON CHEMICAL LABELS AND TAGS

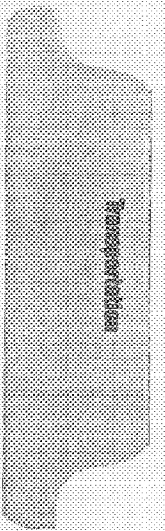
<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>	<u>COMMENTS</u>
Morpholine	M36-1	1183	445	
White Mineral Oil 70, USP	M37-1	0284	385	
White Mineral Oil 90, USP	M37-2	0284	385	
White Mineral Oil 200, USP	M37-3	0284	390	
White Mineral Oil 350, USP	M37-4	0284	395	
Naptha, VM&P	N21-1	0184	337	
Nitric Acid 36°	N24-1A	1285	600	
Nitric Acid 38°	N24-1B	0983	600	
Nitric Acid 40°	N24-1C	1285	600	
Nitric Acid 42°	N24-1D	0983	600	
Nitric Acid 36°	N24-2A	1285	165	
Nitric Acid 38°	N24-2B	1285	170	
Nitric Acid 40°	N24-2C	1285	170	
Nitric Acid 42°	N24-2D	1285	170	
Nitric Acid 36°	N24-3A	0486	85	6 x 14 Tag
Nitric Acid 38°	N24-3B	0486	90	6 x 14 Tag
Nitric Acid 42°	N24-3D	0486	95	6 x 14 Tag
Nitric Acid 35%	N24-9E	0486	140	6 x 12 inch; Corrosive only
Perchloroethylene	P22-1	1183	700	
Phosphoric Acid 75%	P24-1A	0983	700	
Phosphoric Acid 85%	P24-1B	0983	700	
Phosphoric Acid 75% FCC	P24-1C	1284	700	
Phosphoric Acid 85% FCC	P24-1D	0286	700	
Phosphoric Acid 75%	P24-9A	0983	200	6 x 12 inch
Phosphoric Acid 85%	P24-9B	0983	200	6 x 12 inch
Phosphoric Acid 75% FCC	P24-9C	0286	200	6 x 12 inch
Phosphoric Acid 85% FCC	P24-9D	0286	200	6 x 12 inch
n-Propanol	P30.5-1	1083	370	
Propylene Glycol Technical	P31-1A	1183	480	
Propylene Glycol USP	P31-1B	1183	480	
Propylene Glycol, Ind.	P31-1C	0484	480	
Sample	S-10-0	0486	-	
Sentinel	S28-1	0585	50	
Sodium Hypochlorite Sol.	S32-1A	0684	Blank	Burlington only
Sodium Hypochlorite Sol.	S32-1E	0684	Blank	Kansas City only
Sodium Hypochlorite Sol.	S32-1F	0684	Blank	Omaha only
Sodium Hypochlorite Sol.	S32-1I	0684	Blank	Santa Fe Springs only
Sodium Hypochlorite Sol.	S32-1K	0684	Blank	St. Louis only
Sodium Hypochlorite Sol.	S32-1M	0684	Blank	Wichita only
Sodium Silicate	S37-1	0184	Blank	
Sorbitol 70% USP	S38-1B	1183	570	
Styrene	S45-1	1083	410	
Sulfur Dioxide 3 x 5 Tag	S46.5T7	0577	-	
Sulfuric Acid 66°	S47-1A	0983	700	
Sulfuric Acid 66°	S47-9A	0983	225	6 x 12 inch

McKESSON CHEMICAL LABELS AND TAGS

<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>	<u>COMMENTS</u>
Tergitol 15-S-7	T21-1A	0284	450	
Tergitol 15-S-9	T21-1B	0284	460	
Tergitol 15-S-3	T21-1C	0284	430	
Tergitol 15-S-12	T21-1D	0284	460	
Tetrahydrofuran	T22-1	1183	400	
Toluene	T23-1	1083	390	
1,1,1-Trichloroethane	T24-1	1183	592	
Trichloroethylene	T25-1	1183	660	
Triethanolamine 99%	T27-1A	1183	510	
Triethanolamine 85%	T27-1B	1183	510	
Triethylene Glycol	T28-1	1183	520	
Triton N-57	T30-1	0284	460	
Triton X-100	T30-2	0284	480	
Triton N-101	T30.5-1	0284	480	
Triton X-45	T30.5-2	0284	470	
Triton X-102	T30.5-3	0284	480	
Triton X-114	T30.5-4	0284	480	
Tamol 850	T31-1	0284	505	
Versene 100	V21-1	0184	600	
Versenol 120	V22-1	0184	580	
Versenex 80	V23-1	0184	600	
Xylene	X21-1	1083	390	
Xylene, SEMI	X21-1S	0884	390	Blue Borders

McKESSON ENVIROSYSTEMS LABELS AND TAGS

<u>PRODUCT</u>	<u>NUMBER</u>	<u>CURRENT DATE</u>	<u>NET WT (LBS)</u>
Acetone	EA22-1	1183	357
Cyclesolv AT-100	EA36-1	0784	Blank
Cyclesolv AT-101	EA37-1	0784	Blank
McKSolv Colsol	EC23-1	1183	54 gal
McKSolv EPS	EE24-1	1183	54 gal
McKSolv TF	EF27-1	0184	690
McKSolv TMC	EF27-5	0184	630
McKSolv Fiberclean	EF28-1	1183	54 gal
McKSolv Flushsolv #6	EF29-1	1183	54 gal
McKSolv Fluxsolv	EF30-1	1183	54 gal
Isopropyl Alcohol	EI22-1	1183	355
Cyclesolv LT-400	EL21-1	0784	Blank
Methylene Chloride	EM29-1	1183	600
Methyl Ethyl Ketone	EM30-1	1183	366
Perchloroethylene	EP22-1	1183	700
Cyclesolv ST-501	ES22-1	0784	Blank
Cyclesolv ST-502	ES23-1	0784	Blank
1,1,1-Trichloroethane	ET24-1	1183	592
Trichloroethylene	ET25-1	1183	660



Operations

Section	Reference	Page	End
TRANSPORTATION	30.40	1	
Subject	Issue Date	Effective Date	
TRUCK FLEET MAINTENANCE	9/15/85	9/15/85	

GENERAL

There are two types of truck maintenance: 1) demand maintenance, or repairs that must be done on demand when breakdowns occur; and 2) preventive maintenance, or planned maintenance programs to head off failures.

The money spent on maintaining trucks is and always will be an expense item on the books, but the money spent unnecessarily on maintenance, such as when a breakdown that could be prevented occurs, goes further than that. It becomes a direct drain on your profits.

Planning a maintenance program to head off as many unexpected expenses as possible will mean extra dollars in the profit column.

The McKesson Chemical Group has in the past few years converted very heavily from gasoline trucks to late model diesel units as part of our energy program. To further maximize the fuel efficiency needed in this period of rapidly rising fuel costs, we must keep our trucks in peak operating condition. This can only be achieved through proper spec'ing, ongoing driver training, a good tachograph program, and a well managed fleet. A basic essential to a properly managed fleet is a good PM (Preventive Maintenance) program which management is strongly committed to carrying out.

The following Preventive Maintenance Program shall be standard procedure. However, it is not essential to follow this guide exactly as written if you currently have another good program (Some of our trucks are repaired by Foremost Dairies and follow their PM program; some have their own shops and follow slightly dissimilar programs set up by truck manufacturers; and some are on a contract maintenance program.)

If any service center is currently not following a PM program similar to the attached Exhibits, they should discuss it with their Regional Operations Manager who will help them put a program into effect.

McKesson

Operations

Section	Reference	Page	End
TRANSPORTATION	30.40	2	X
Subject	Issue Date	Effective Date	
TRUCK FLEET MAINTENANCE	9/15/85	9/15/85	

EXHIBITS

The following exhibits are self-explanatory:

- Exhibit 1 - PM Procedure for Diesel Powered Units
- Exhibit 1a - Worksheet A for high mileage diesel
- Exhibit 1b - Worksheet B for high mileage diesel
- Exhibit 1c - Worksheet C for high mileage diesel
- Exhibit 2 - PM Procedure for Gasoline Powered Units
- Exhibit 2a - Worksheet A for gasoline powered units
- Exhibit 2b - Worksheet B for gasoline powered units
- Exhibit 2c - Worksheet C for gasoline powered units
- Exhibit 3 - PM Procedure for Trailers (Cargo tank inspection should incorporate the same procedure with separate attention given to the tank & fittings.)
- Exhibit 3a - Worksheet for trailer preventive maintenance

ADDITIONAL

The above programs do not address themselves to the daily routine of safety pre-inspection or adding oil or fuel as needed.

Further, it is important that 1) at all intervals, check the condition and status of placards, repair and replace as needed, and 2) at all intervals, check condition and operation of liftgates.

It has been recommended that at every "C" interval, any Mack diesel engine should have the heads retorqued. Special equipment, such as power take-off pumps, Dunbar unloaders, hoists, cranes, etc., as part of trucks or trailers, should be inspected at all intervals. (Special instructions and checklists should be prepared to meet manufacturer's suggestions.)

PREVENTIVE MAINTENANCE

Diesel Powered Units

Equipped without a lubrifier

- A. Service every 6,000 miles
- B. Service every 24,000 miles
- C. Service every 48,000 miles

(Oil change every 12,000 miles)

Equipped with a lubrifier

- A. Service every 8,000 miles
- B. Service every 24,000 miles
- C. Service every 48,000 miles

(Oil change every 16,000 miles)

Estimated Labor Cost

- | | |
|---------------------------|-------------|
| A. Service inspection | 4-6 hours |
| B. Service inspection | 9-11 hours |
| C. Service inspection | 16-18 hours |
| (1) Second "C" inspection | 23-25 hours |

USE ALL MANUFACTURERS' RECOMMENDED

OIL - LUBE - ADJUSTMENTS

<u>Miles</u>	<u>PM</u>	<u>Oil Change</u>	<u>Miles</u>	<u>PM</u>	<u>Oil Change</u>
6,000	A	No	8,000	A	No
12,000	A	Yes	16,000	A	Yes
18,000	A	No	24,000	B	No
24,000	B	Yes	32,000	A	Yes
30,000	A	No	40,000	A	No
36,000	A	Yes	48,000	C	Yes
42,000	A	No			
48,000	C	Yes			



CHEM OP 30.40 Exhibit 1a
9/15/85 9/15/85
Page 1 of 2

Diesel

PREVENTIVE MAINTENANCE INSPECTION HIGH MILEAGE DIESEL

A

TRUCK NO. _____ DATE _____

MILEAGE _____ LOCATION _____

MILES SINCE LAST P.M. _____

INSPECTION CODE: ✓ = OK

 O = FOLLOW-UP NEEDED

 X = ADJUSTMENT MADE

DRIVE ON INSPECTION

CHECK SPRING PARKING BRAKE

CHECK CLUTCH PEDAL FREE TRAVEL

CHECK ODOMETER SEALS

AIR PRESS. DROP/LB/MIN. -BRAKES APPLIED

CHECK LOW AIR PRESSURE WARNING DEVICE

CHECK TRACTOR PROTECTION VALVE

CIRCLE INSPECTION

CHECK INNER AND OUTER HUBS FOR LUBE LEAKS

CHECK FUEL TANK MOUNTING

CHECK 5TH WHEEL MOUNTING AND CONDITION.

TIRE AND WHEEL INSPECTION

CHECK REMAINING TREAD

CHECK TIRES FOR CORRECT AIR PRESSURE

CHECK WHEELS FOR CRACKS OR LOOSE LUGS

BATTERY INSPECTION

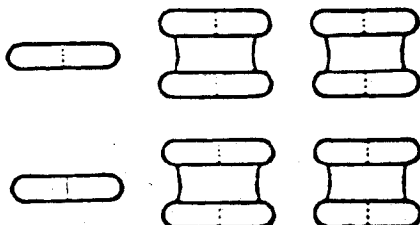
CHECK FOR SIGNS OF OVERCHARGING

ADD WATER TO PROPER LEVEL

CHECK FOR CORROSION

CHECK TERMINALS AND CABLES

CHECK BATTERY HOLD-DOWNS



ENGINE COMPARTMENT INSPECTION

CHECK ANTI-FREEZE (IN SEASON)

FILL COOLING SYSTEM

CHECK HOSE CONDITION

CHECK ALL BELTS FOR CONDITION & ADJUSTMENT

CHECK FAN ASSEMBLY FOR LOOSENESS

CHECK RADIATOR MOUNTING & FAN SHROUD

CHECK ENGINE FOR OIL LEAKS

UNDER VEHICLE INSPECTION

CHECK TRANSMISSION FOR LEAKS

CHECK DIFFERENTIALS AND AXLES FOR LEAKS

CHECK AXLE BREATHERS

CHECK ENGINE AND TRANSMISSION MOUNTS

CHECK DRIVE LINES, "U" JOINTS AND SLIP YOKES

CHECK FOR LOOSE "U" BOLTS & SPRING HANGERS

CHECK BRAKE ADJUSTMENT

CHECK BRAKE CHAMBER HOSES FOR CHAFING

CHECK ENTIRE STEERING FOR LOOSENESS
(TIE ROD ENDS, STEERING ARMS, DRAG LINK,
IDLER ARM, PITMAN ARM, STEERING BOX,
STEERING SHAFT SPLINES AND JOINTS)

CHECK STEERING BOX FOR LEAKS

RAISE FRONT END

CHECK KING PINS FOR WEAR

CHECK FRONT WHEEL BEARINGS FOR LOOSENESS

ITEMS NOT LISTED ON THIS FORM BUT FOUND TO BE IN NEED
OF ATTENTION ARE TO BE NOTED ON REVERSE SIDE.

ROAD TEST _____

CORRECT P.M. INSP. STICKER _____

P.M. PERFORMED BY _____



Foremost-McKesson, Inc.

McK00319

**"A" PREVENTIVE MAINTENANCE
 HIGH MILEAGE DIESEL**

LUBRICATION			AIR CLEANER SERVICE		
LUBRICATE CHASSIS & ACCESSORIES			DRY TYPE		
REFER TO CHART			a. RECORD AIR RESTRICTION		
LUBRICATE DOOR LATCHES & HINGES			b. IF RESTRICTION EXCEEDS 18" H ₂ O,		
CHECK ALL LUBRICANT LEVELS			CHANGE ELEMENT		
a. ENGINE OIL LEVEL			OIL BATH		
b. FRONT WHEEL OIL LEVEL			a. CLEAN CENTER TUBE & PAN		
c. STEERING BOX			b. FILL PAN TO PROPER LEVEL		
d. TRANSMISSIONS			c. CHECK PAN GASKET		
e. DIFFERENTIALS			CHECK AIR INTAKE PIPES & CONNECTIONS		
f. TWO SPEED MOTOR			DIESEL ENGINE SERVICE		
			CHECK FOR UNUSUAL ENGINE NOISES, SURGING		
			OR MISSING		
			CHECK ALL GOVERNOR AND PUMP SEALS		
			(ANY MISSING SEALS OR SIGNS OF TAMPERING		
			MUST BE REPORTED TO SHOP MANAGEMENT)		
			DRAIN ANY WATER PRESENT FROM EACH FUEL		
			FILTER EQUIPPED WITH A DRAIN COCK		
			ON OIL CHANGE INTERVAL (Use Mfg. specs.)		
			DO THE FOLLOWING SERVICES		
			CHANGE ENGINE OIL		
			CHANGE OIL FILTERS		
			CHANGE FUEL FILTERS (EXCEPT LARGE		
			INDUSTRIAL TYPES)		
			CHANGE PERRY WATER FILTER		
			CLEAN OR REPLACE CRANKCASE BREATHER		
			RUN ENGINE - RECHECK FOR FUEL AND		
			OIL LEAKS		
			BLEED AIR FROM LUBRIFINER COVER		

DRIVER'S EXPLANATION:

DRIVER

GARAGE'S REMARKS:

SIGNED

Garage Supervisor



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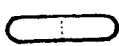


Diesel



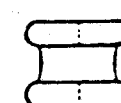
PREVENTIVE MAINTENANCE INSPECTION HIGH MILEAGE DIESEL

MILES SINCE LAST P.M. _____

INSPECTION CODE: ✓ = OK O = FOLLOW-UP NEEDED X = ADJUSTMENT MADE

DRIVE ON INSPECTION			
CHECK SPRING PARKING BRAKE			
CHECK CLUTCH PEDAL FREE TRAVEL			
CHECK ODOMETER SEALS			
AIR PRESS. DROP/LB/MIN.—BRAKES APPLIED			
CHECK LOW AIR PRESSURE WARNING DEVICE			
CHECK TRACTOR PROTECTION VALVE			
CIRCLE INSPECTION			
CHECK INNER AND OUTER HUBS FOR LUBE LEAKS			
CHECK FUEL TANK MOUNTING			
CHECK 5TH WHEEL MOUNTING AND CONDITION			
TIRE AND WHEEL INSPECTION			
CHECK REMAINING TREAD			
CHECK TIRES FOR CORRECT AIR PRESSURE			
CHECK WHEELS FOR CRACKS OR LOOSE LUGS			
BATTERY INSPECTION			
CHECK FOR SIGNS OF OVERCHARGING			
ADD WATER TO PROPER LEVEL			
CHECK FOR CORROSION			
CHECK TERMINALS AND CABLES			
CHECK BATTERY HOLD-DOWNS			

ENGINE COMPARTMENT INSPECTION			
CHECK ANTI-FREEZE (IN SEASON)			
FILL COOLING SYSTEM			
CHECK HOSE CONDITION			
CHECK ALL BELTS FOR CONDITION & ADJUSTMENT			
CHECK FAN ASSEMBLY FOR LOOSENESS			
CHECK RADIATOR MOUNTING & FAN SHROUD			
CHECK ENGINE FOR OIL LEAKS			
UNDER VEHICLE INSPECTION			
CHECK TRANSMISSION FOR LEAKS			
CHECK DIFFERENTIALS AND AXLES FOR LEAKS			
CHECK AXLE BREATHERS			
CHECK ENGINE AND TRANSMISSION MOUNTS			
CHECK DRIVE LINES, "U" JOINTS AND SLIP YOKES			
CHECK FOR LOOSE "U" BOLTS & SPRING HANGERS			
CHECK BRAKE ADJUSTMENT			
CHECK BRAKE CHAMBER HOSES FOR CHAFING			
CHECK ENTIRE STEERING FOR LOOSENESS (TIE ROD ENDS, STEERING ARMS, DRAG LINK, IDLER ARM, PITMAN ARM, STEERING BOX, STEERING SHAFT SPLINES AND JOINTS)			
CHECK STEERING BOX FOR LEAKS			
RAISE FRONT END			
CHECK KING PINS FOR WEAR			
CHECK FRONT WHEEL BEARINGS FOR LOOSENESS			

ITEMS NOT LISTED ON THIS FORM BUT FOUND TO BE IN NEED
OF ATTENTION ARE TO BE NOTED ON REVERSE SIDE.

ROAD TEST

CORRECT P.M. INSP. STICKER _____

P.M. PERFORMED BY _____



Foremost-McKesson, Inc.

McK00321

**"B" PREVENTIVE MAINTENANCE
 HIGH MILEAGE DIESEL**

LUBRICATION		DIESEL ENGINE SERVICE	
LUBRICATE CHASSIS & ACCESSORIES		CHECK FOR UNUSUAL ENGINE NOISES, SURGING OR MISSING	
REFER TO CHART		CHECK ALL GOVERNOR AND PUMP SEALS (ANY MISSING SEALS OR SIGNS OF TAMPERING MUST BE REPORTED TO SHOP MANAGEMENT)	
LUBRICATE DOOR LATCHES & HINGES		DRAIN ANY WATER PRESENT FROM EACH FUEL FILTER EQUIPPED WITH A DRAIN COCK	
CHECK ALL LUBRICANT LEVELS		CHECK EMERGENCY SHUT DOWN (GM)	
a. ENGINE OIL LEVEL		ON OIL CHANGE INTERVAL (Use Mfg. specs.)	
b. FRONT WHEEL OIL LEVEL		DO THE FOLLOWING SERVICES	
c. STEERING BOX		CHANGE ENGINE OIL	
d. TRANSMISSIONS		CHANGE OIL FILTERS	
e. DIFFERENTIALS		CHANGE FUEL FILTERS (EXCEPT LARGE INDUSTRIAL TYPES)	
f. TWO SPEED MOTOR		CHANGE PERRY WATER FILTER	
REAR BRAKE LINING INSPECTION "S CAM"		CLEAN OR REPLACE CRANKCASE BREATHER	
REMOVE LOWER DUST SHIELD		RUN ENGINE-RECHECK FOR FUEL & OIL LEAKS	
RECORD DRUM CONDITION		BLEED AIR FROM LUBRIFINER COVER	
RECORD REMAINING LINING %		ROAD TEST INSPECTION	
REAR BRAKE LINING INSPECTION "WEDGE"		CHECK STEERING FEEL	
INSPECT LINING THICKNESS THRU INSPECTION HOLES IN DUST SHIELDS		CHECK SHIFTING EASE	
RECORD REMAINING LINING %		CHECK BRAKE FEEL	
CRANKING MOTOR INSPECTION		CHECK ENGINE OPERATION	
MAKE VISUAL INSPECTION OF STARTER		CHECK CAB AND DOOR RATTLES	
CHECK OPERATION OF STARTER		CHECK CAB HEATER	
MAKE ELECTRICAL STARTER TEST		CHECK CAB AIR CONDITIONER	
CHARGING SYSTEM TEST			
CHECK MAXIMUM ALTERNATOR OUTPUT			
CHECK MAXIMUM CHARGING VOLTAGE			
AIR CLEANER SERVICE			
DRY TYPE			
a. RECORD AIR RESTRICTION			
b. IF RESTRICTION EXCEEDS 18" H ₂ O, CHANGE ELEMENT			
OIL BATH			
a. CLEAN CENTER TUBE & PAN			
b. FILL PAN TO PROPER LEVEL			
c. CHECK PAN GASKET			
CHECK AIR INTAKE PIPES & CONNECTIONS			

DRIVER'S EXPLANATION:

GARAGE'S REMARKS:

DRIVER

SIGNED

Garage Supervisor



CHEM OP 30.40 Exhibit 1c
9/15/85 9/15/95
Page 1 of 2

Page 1 of 2

C

PREVENTIVE MAINTENANCE INSPECTION HIGH MILEAGE DIESEL


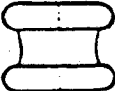

MILES SINCE LAST P.M. _____




✓ = OK

0 = FOLLOW-UP NEEDED

X = ADJUSTMENT MADE

DRIVE ON INSPECTION		ENGINE COMPARTMENT INSPECTION	
CHECK SPRING PARKING BRAKE		CHECK ANTI-FREEZE (IN SEASON)	
CHECK CLUTCH PEDAL FREE TRAVEL		FILL COOLING SYSTEM	
CHECK ODOMETER SEALS		CHECK HOSE CONDITION	
AIR PRESS. DROP/LB/MIN.—BRAKES APPLIED		CHECK ALL BELTS FOR CONDITION & ADJUSTMENT	
CHECK LOW AIR PRESSURE WARNING DEVICE		CHECK FAN ASSEMBLY FOR LOOSENESS	
CHECK TRACTOR PROTECTION VALVE		CHECK RADIATOR MOUNTING & FAN SHROUD	
CIRCLE INSPECTION		CHECK ENGINE FOR OIL LEAKS	
CHECK INNER AND OUTER HUBS FOR LUBE LEAKS		UNDER VEHICLE INSPECTION	
CHECK FUEL TANK MOUNTING		CHECK TRANSMISSION FOR LEAKS	
CHECK 5TH WHEEL MOUNTING AND CONDITION		CHECK DIFFERENTIALS AND AXLES FOR LEAKS	
TIRE AND WHEEL INSPECTION		CHECK AXLE BREATHERS	
CHECK REMAINING TREAD		CHECK ENGINE AND TRANSMISSION MOUNTS	
CHECK TIRES FOR CORRECT AIR PRESSURE		CHECK DRIVE LINES, "U" JOINTS AND SLIP YOKES	
CHECK WHEELS FOR CRACKS OR LOOSE LUGS		CHECK FOR LOOSE "U" BOLTS & SPRING HANGERS	
BATTERY INSPECTION		CHECK BRAKE ADJUSTMENT	
CHECK FOR SIGNS OF OVERCHARGING		CHECK BRAKE CHAMBER HOSES FOR CHAFING	
ADD WATER TO PROPER LEVEL		CHECK ENTIRE STEERING FOR LOOSENESS	
CHECK FOR CORROSION		(TIE ROD ENDS, STEERING ARMS, DRAG LINK, IDLER ARM, PITMAN ARM, STEERING BOX, STEERING SHAFT SPLINES AND JOINTS)	
CHECK TERMINALS AND CABLES		CHECK STEERING BOX FOR LEAKS	
CHECK BATTERY HOLD-DOWNS		RAISE FRONT END	
		CHECK KING PINS FOR WEAR	
		CHECK FRONT WHEEL BEARINGS FOR LOOSENESS	

P.M. PERFORMED BY _____



Foremost-McKesson, Inc.

McK00323

**"C" PREVENTIVE MAINTENANCE
HIGH MILEAGE DIESEL**

LUBRICATION		DIESEL ENGINE SERVICE	
LUBRICATE CHASSIS & ACCESSORIES		CHECK FOR UNUSUAL ENGINE NOISES, SURGING OR MISSING	
REFER TO CHART		CHECK ALL GOVERNOR & PUMP SEALS	
LUBRICATE DOOR LATCHES & HINGES		(ANY MISSING SEALS OR SIGNS OF TAMPERING MUST BE REPORTED TO SHOP MANAGEMENT)	
CHECK ALL LUBRICANT LEVELS		CHANGE FUEL FILTERS	
a. ENGINE OIL LEVEL		CLEAN FUEL PUMP SCREEN (CUMMINS)	
b. FRONT WHEEL OIL LEVEL		CHECK EMERGENCY SHUT DOWN (GM)	
c. STEERING BOX		LUBRICATE FAN HUB AND WATER PUMP	
d. CHANGE TRANSMISSION LUBE & FILTER		DIESEL ENGINE TUNE-UP (140° OIL TEMP)	
e. CHANGE DIFFERENTIAL LUBE		SET VALVES AND INJECTORS (CUMMINS)	
f. TWO SPEED MOTOR		CHECK RAIL PRESSURE AND RECORD PSI	
REAR BRAKE LINING INSPECTION "S CAM"		SET VALVES, INJECTOR HEIGHT & RACK (GM)	
REMOVE LOWER DUST SHIELD		SET VALVE TAPPETS (MACK)	
RECORD DRUM CONDITION		CHECK HIGH IDLE RPM WITH MASTER TACK	
RECORD REMAINING LINING %		ON SECOND "C" INSPECTION ONLY	
REAR BRAKE LINING INSPECTION "WEDGE"		PULL INJECTORS, CLEAN & FLOW TEST (CUMMINS)	
INSPECT LINING THICKNESS THRU INSPECTION HOLES IN DUST SHIELDS		PULL ALTERNATOR AND OVERHAUL	
RECORD REMAINING LINING %		PULL STARTER AND OVERHAUL	
FRONT WHEEL PULL		PULL SERIES PARALLEL SWITCH AND OVERHAUL	
REMOVE, CLEAN, INSPECT & LUBRICATE EVERY "C"		ON OIL CHANGE INTERVAL (Use Mfg. specs.)	
REAR WHEEL PULL (PACKED TYPE)		DO THE FOLLOWING SERVICES	
REMOVE, CLEAN, INSPECT & REPACK EVERY "C"		CHANGE ENGINE OIL	
REAR WHEEL PULL (RUNNING IN OIL)		CHANGE OIL FILTERS	
REMOVE ONLY IF BRAKE WORK IS NECESSARY		CHANGE PERRY WATER FILTER	
OR IF WHEEL BEARINGS ARE LOOSE OR NOISY		CLEAN OR REPLACE CRANKCASE BREATHER	
CRANKING MOTOR INSPECTION		RUN ENGINE - RECHECK FOR FUEL & OIL LEAKS	
MAKE VISUAL INSPECTION OF STARTER		BLEED AIR FROM LUBRIFINER COVER	
CHECK OPERATION OF STARTER		ROAD TEST INSPECTION	
MAKE ELECTRICAL STARTER TEST		MAKE ODOMETER ACCURACY TEST	
CHARGING SYSTEM TEST		CHECK STEERING FEEL	
CHECK MAXIMUM ALTERNATOR OUTPUT		CHECK SHIFTING EASE	
CHECK MAXIMUM CHARGING VOLTAGE		CHECK BRAKE FEEL	
AIR CLEANER SERVICE		CHECK ENGINE OPERATION	
DRY TYPE		CHECK CAB AND DOOR RATTLES	
a. RECORD AIR RESTRICTION		CHECK CAB HEATER	
b. IF RESTRICTION EXCEEDS 18" H ₂ O, CHANGE ELEMENT		CHECK CAB AIR CONDITIONER	
OIL BATH			
a. REMOVE COMPLETE AIR CLEANER-Soak in Solvent			
b. FILL PAN TO PROPER LEVEL			
c. CHECK PAN GASKET			
CHECK AIR INTAKE PIPES & CONNECTIONS			

DRIVER'S EXPLANATION:

DRIVER

GARAGE'S REMARKS:

SIGNED

Garage Supervisor

PREVENTIVE MAINTENANCE

Gasoline Powered Units

Service Schedule

- A. Service every 4,000 miles
- B. Service every 12,000 miles
- C. Service every 48,000 miles

(Oil change every 4,000 miles)

Estimated Labor Cost

- A. Service inspection 3-5 hours
- B. Service inspection 7-9 hours
- C. Service inspection 14-16 hours

<u>Miles</u>	<u>PM</u>	<u>Oil Change</u>	<u>Miles</u>	<u>PM</u>	<u>Oil Change</u>
4,000	A	Yes	28,000	A	Yes
8,000	A	Yes	32,000	A	Yes
12,000	B	Yes	36,000	B	Yes
16,000	A	Yes	40,000	A	Yes
20,000	A	Yes	44,000	A	Yes
24,000	B	Yes	48,000	C	Yes

USE ALL MANUFACTURERS' RECOMMENDED

OIL - LUBE - ADJUSTMENTS

Gasoline



CHEM OP 30.40 Exhibit 2a
9/15/85 9/15/85
Page 1 of 2

A

GASOLINE POWERED STRAIGHT TRUCKS AND TRACTORS PREVENTIVE MAINTENANCE INSPECTION

TRUCK NO. _____ DATE _____

MILEAGE _____ LOCATION _____

MILES SINCE LAST P.M. _____

INSPECTION CODE: ✓ = OK 0 = FOLLOW-UP NEEDED X = ADJUSTMENT MADE

DRIVE ON INSPECTION

- ☐ CHECK CLUTCH PEDAL FREE TRAVEL
- ☐ CHECK ODOMETER SEALS
- ☐ AIR PRESS. DROP/LB/MIN.-BRAKES APPLIED
- ☐ CHECK LOW AIR PRESSURE WARNING DEVICE
- ☐ CHECK TRACTOR PROTECTION VALVE
- ☐ OPEN SHUTTERS CHECK CORE FOR BUGS

CIRCLE INSPECTION

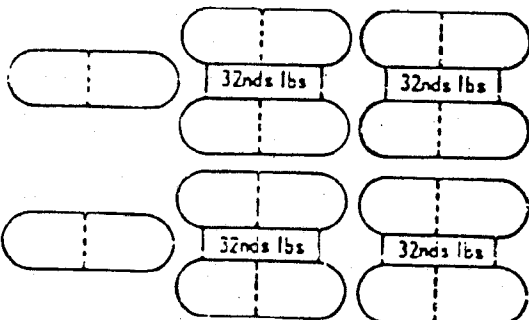
- ☐ CHECK INNER AND OUTER HUBS FOR LUBE LEAKS
- ☐ CHECK FUEL TANK MOUNTING
- ☐ CHECK 5TH WHEEL MOUNTING & CONDITION

TIRE AND WHEEL INSPECTION

- ☐ CHECK REMAINING TREAD
- ☐ CHECK TIRES FOR CORRECT AIR PRESSURE
- ☐ CHECK WHEELS FOR CRACKS OR LOOSE LUGS

BATTERY INSPECTION

- ☐ CHECK FOR SIGNS OF OVERCHARGING
- ☐ ADD WATER TO PROPER LEVEL
- ☐ CHECK FOR CORROSION
- ☐ CHECK TERMINALS AND CABLES
- ☐ CHECK BATTERY HOLD-DOWNS



ENGINE COMPARTMENT INSPECTION

- ☐ CHECK ANTI-FREEZE (IN SEASON)
- ☐ FILL COOLING SYSTEM
- ☐ CHECK HOSE CONDITION
- ☐ CHECK ALL BELTS FOR CONDITION & ADJUSTMENT
- ☐ CHECK FAN ASSEMBLY FOR LOOSENESS
- ☐ CHECK RADIATOR MOUNTING AND FAN SHROUD
- ☐ CHECK ENGINE FOR OIL LEAKS

UNDER VEHICLE INSPECTION

- ☐ CHECK TRANSMISSION FOR LEAKS.
- ☐ CHECK DIFFERENTIALS AND AXLES FOR LEAKS
- ☐ CHECK AXLE BREATHERS
- ☐ CHECK ENGINE AND TRANSMISSION MOUNTS
- ☐ CHECK DRIVE LINES' "U" JOINTS AND SLIP YOKES
- ☐ CHECK FOR LOOSE "U" BOLTS AND SPRING HANGERS
- ☐ CHECK BRAKE ADJUSTMENT
- ☐ CHECK BRAKE CHAMBER HOSES FOR CHAFING
- ☐ CHECK ENTIRE STEERING FOR LOOSENESS
- ☐ (TIE ROD ENDS, STEERING ARMS, DRAG LINK, IDLER ARM, PITMAN ARM, STEERING BOX, STEERING SHAFT SPLINES AND JOINTS)
- ☐ CHECK STEERING BOX FOR LEAKS
- ☐ RAISE FRONT END
- ☐ CHECK KING PINS FOR WEAR
- ☐ CHECK FRONT WHEEL BEARINGS FOR LOOSENESS

ITEMS NOT LISTED ON THIS FORM BUT FOUND TO BE IN NEED
OF ATTENTION ARE TO BE NOTED ON REVERSE SIDE

ROAD TEST _____

CORRECT P.M. INSP. STICKER _____

P.M. PERFORMED BY _____



McK00326

CHEM OP 30.40 Exhibit 2a
9/15/85 9/15/85
Page 2 of 2

"A" PREVENTIVE MAINTENANCE

INSPECTION CODE: ✓ = OK 0 = FOLLOW-UP NEEDED X = ADJUSTMENT MADE

[illegible]

McK00327

Gasoline

GASOLINE POWERED STRAIGHT TRUCKS AND TRACTORS PREVENTIVE MAINTENANCE INSPECTION

B

TRUCK NO. _____ DATE _____

MILEAGE _____ LOCATION _____

MILES SINCE LAST P.M. _____

INSPECTION CODE: ✓ = OK O = FOLLOW-UP NEEDED X = ADJUSTMENT MADE

[illegible]

ITEMS NOT LISTED ON THIS FORM BUT FOUND TO BE IN NEED
OF ATTENTION ARE TO BE NOTED ON REVERSE SIDE

ROAD TEST _____

CORRECT P.M. INSP. STICKER

P.M. PERFORMED BY



Foremost-McKesson, Inc.

McK00328

"B" PREVENTIVE MAINTENANCE

X = ADJUSTMENT MADE



C

McK00330

Page 2 of 2

X = ADJUSTMENT MADE

McK00331

PREVENTIVE MAINTENANCE

Trailer Equipment

Service Schedule

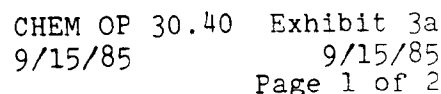
- A. Inspection monthly
- B. Inspection every three months

Estimated Labor Cost

- A. Inspection 1-3 hours
- B. Inspection 2-5 hours

USE ALL MANUFACTURERS' RECOMMENDED

OIL - LUBE - ADJUSTMENTS



TRAILER NO. _____ DATE _____
HUBOMETER READING _____ LOCATION _____
DATE OF LAST P.M. _____

"D" INSPECTION - EVERY MONTH				
TIRES, WHEELS AND BRAKES				
CHECK TIRE INFLATION AND RECORD				
MEASURE TREAD DEPTH AND RECORD				
CHECK LUG BOLTS				
CHECK SPARE TIRE AND CARRIER				
CHECK BRAKE ADJUSTMENT				
LUBRICATION				
CHECK OIL LEVEL IN WHEELS				
LUBRICATE CHASSIS				
LIGHTS AND WIRING				
CHECK ALL LIGHTS				
CHECK ALL REFLECTORS				
TRAILER BODY				
INSPECT FOR SHEET METAL DAMAGE				
INSPECT CONDITION OF FLOOR AND LINING				
CHECK MUD FLAPS				

[illegible]

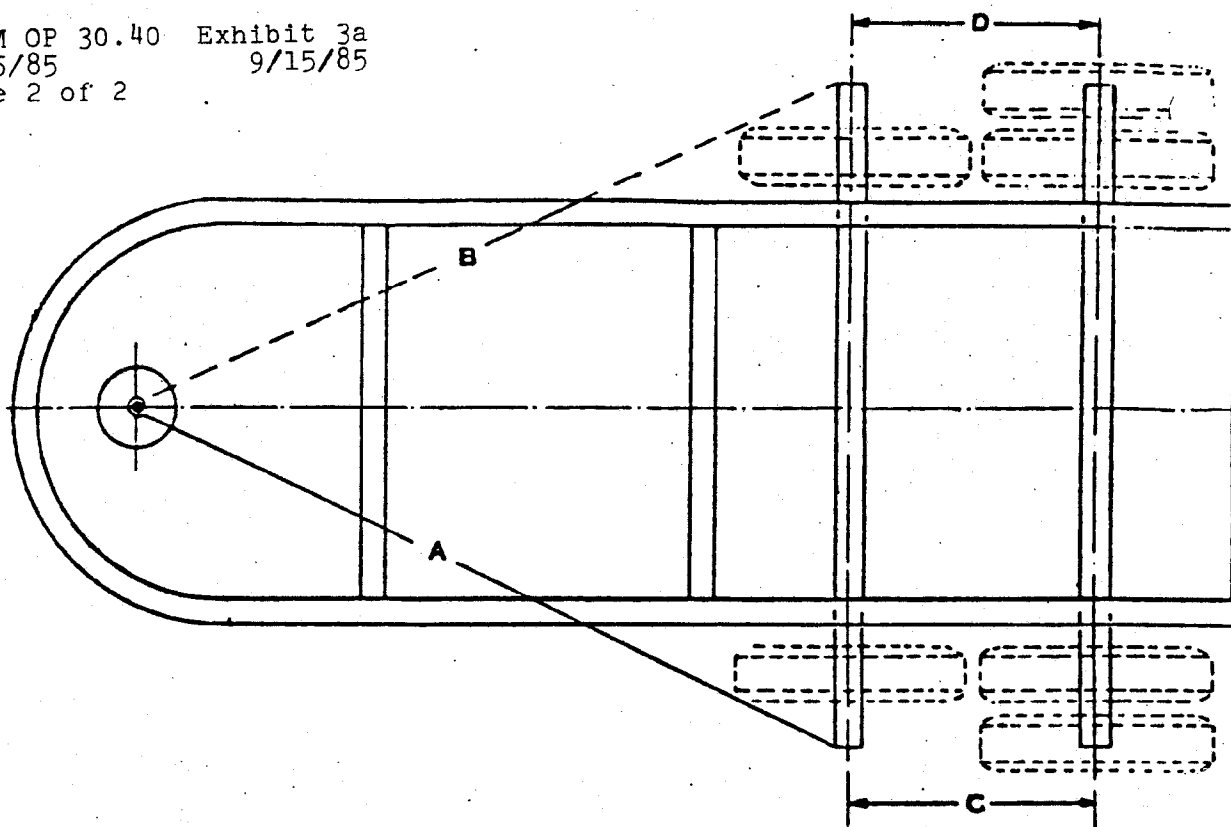
INSPECTION CODE: ✓ = OK O = NEEDS REPAIR
 X = ADJUSTMENT MADE

CORRECT P.M. INSP. STICKER _____

P.M. PERFORMED BY _____



Foremost-McKesson, Inc.



	BEFORE ADJUSTMENT BEFORE ADJUSTMENT	AFTER ADJUSTMENT
A - MEASUREMENT		
B - MEASUREMENT		
C - MEASUREMENT		
D - MEASUREMENT		

FRONT AXLE	REAR AXLE
32nds lbs	32nds lbs
32nds lbs	32nds lbs

THE ABOVE TIRE PRINTS ARE TO BE USED TO RECORD
 EXISTING TREAD DEPTHS AND AIR PRESSURES

McKesson
Operations

Section	Reference	Page	End
TRANSPORTATION	30.50	1	X
Subject	Issue Date	Effective Date	
DRIVER'S DAILY LOG	9/15/85	9/15/85	

GENERAL

When drivers are required to complete daily log books, the following information must appear on each log.

1. Month, date, and year
2. Total miles traveled
3. Identification of vehicle number (tractor and trailer)
4. Name of driver
5. Principal place of business (McKesson Chemical, Regional office address)
6. Home terminal (your Service Center address)
7. Off duty time
8. Sleeper berth time (if any)
9. Driving time (any time period behind the wheel over fifteen minutes)
10. On duty not driving (all time spent other than driving)
11. Total hours equaling 24
12. An invoice number for each delivery
13. A quarter hour entry at the beginning of each trip showing pre-trip inspection
14. A town and state entry for each stop
15. Tire inspection entry (every two hours or every 100 miles, whichever comes first and each time the vehicle is stopped)
16. Completion of recap section of the log (60 hours, 7 days)
17. Completion of log summary sheet on the back cover of the log book
18. Starting point and return point
19. Entry for vehicle condition report
20. Completion of vehicle condition report itself

Each of these entries is identified on Exhibit 1 with its corresponding number.

DELUXE DUPLICATE or TRIPLICATE COPY LOG BOOK with
Deluxe Driver's Vehicle Condition Report

(This form has been reduced to meet space requirements of this page. The actual size of the Driver's Daily Log portion of the form is in full compliance with DOT size requirements.)

FORM MCS-15 PRESCRIBED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION Rev. 6/1

DRIVER'S DAILY LOG
(ONE CALENDAR DAY - 24 HOURS)

Form Approved: Budget Bureau No. 01-07799
ORIGINAL - For DOT use at home terminal
DUPLICATE - Driver retains at his disposal for 10 days

① 11 6 78 (YEAR) ② 205 (TOTAL MILEAGE TODAY)

I certify these entries are true and correct. ③ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

④ John A. Smith (DRIVER'S SIGNATURE IN FULL)

⑤ McKesson Chemical Company (NAME OF CARRIER)
Regional Office address (LOCAL OFFICE ADDRESS)

⑥ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

⑦ 11 6 78 (DATE)

⑧ 205 (TOTAL MILEAGE TODAY)

⑨ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

⑩ John A. Smith (DRIVER'S SIGNATURE IN FULL)

⑪ McKesson Chemical Company (NAME OF CARRIER)
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⑫ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

⑬ 11 6 78 (DATE)

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㊼ McKesson Chemical Company (NAME OF CARRIER)
Regional Office address (LOCAL OFFICE ADDRESS)

㊽ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

㊾ 11 6 78 (DATE)

㊿ 205 (TOTAL MILEAGE TODAY)

1: OFF DUTY
2: SLEEPING
3: DRIVING
4: ON DUTY

REMARKS:
56974
49178
46921

Montvale, N.J. (Starting Point of Trip)

Edison, N.J. and returned (Ending Point of Trip)

USE TIME STANDSTILL AT HOME TERMINAL

① 20

Driver's Daily Vehicle Condition Report
As required by U.S. Dept. of Transportation Reg. Sec. 392.24, 394.7
(Check any defective item with X and give details)

DATE 11/6/78 TIME: 4:10 AM PLACE Montvale, N.J.

COMPANY McKesson Chemical Company

TRUCK NO. 596 Speedometer Reading 159483

② 20

③ 596 (VEHICLE NUMBER)

④ 45978 (TRAILER NUMBER)

⑤ John A. Smith (DRIVER'S SIGNATURE)

⑥ McKesson Chemical Company (NAME OF CARRIER)

⑦ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

⑧ 11 6 78 (DATE)

⑨ 205 (TOTAL MILEAGE TODAY)

⑩ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

⑪ John A. Smith (DRIVER'S SIGNATURE IN FULL)

⑫ McKesson Chemical Company (NAME OF CARRIER)
Regional Office address (LOCAL OFFICE ADDRESS)

⑬ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

⑭ 11 6 78 (DATE)

⑮ 205 (TOTAL MILEAGE TODAY)

⑯ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

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Regional Office address (LOCAL OFFICE ADDRESS)

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⑳ 11 6 78 (DATE)

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㉒ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

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㉕ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

㉖ 11 6 78 (DATE)

㉗ 205 (TOTAL MILEAGE TODAY)

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㉜ 11 6 78 (DATE)

㉝ 205 (TOTAL MILEAGE TODAY)

㉞ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

㉟ John A. Smith (DRIVER'S SIGNATURE IN FULL)

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㊲ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

㊳ 11 6 78 (DATE)

㊴ 205 (TOTAL MILEAGE TODAY)

㊵ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

㊶ John A. Smith (DRIVER'S SIGNATURE IN FULL)

㊷ McKesson Chemical Company (NAME OF CARRIER)
Regional Office address (LOCAL OFFICE ADDRESS)

㊸ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

㊹ 11 6 78 (DATE)

㊺ 205 (TOTAL MILEAGE TODAY)

㊻ 596 45978 (VEHICLE NUMBER - 1 EACH EACH UNIT)

㊼ John A. Smith (DRIVER'S SIGNATURE IN FULL)

㊽ McKesson Chemical Company (NAME OF CARRIER)
Regional Office address (LOCAL OFFICE ADDRESS)

㊾ Montvale, N.J. 07645 (HOME TERMINAL ADDRESS)

㊿ 11 6 78 (DATE)

1: OFF DUTY
2: SLEEPING
3: DRIVING
4: ON DUTY

REMARKS:
56974
49178
46921

Montvale, N.J. (Starting Point of Trip)

Edison, N.J. and returned (Ending Point of Trip)

USE TIME STANDSTILL AT HOME TERMINAL

(NOTE: Lined border indicates form dimensions only and is not part of the original form.)

MONTHLY LOG SUMMARY SHEET																					
Month _____																					
<p>If you operate on the period of 70 hours in 8 days, use the summary sheet on the left. If you operate on the period of 60 hours in 7 days, use the summary sheet to the right. The figures 1 to 31 represent calendar days, and entries should be made for each day - even when driver does not work. If no work is performed, enter zero(0) in first column and compute other columns as explained below.</p>																					
<p>70 HRS/8 DAY DRIVER'S ONLY</p> <p>HOURS WORKED TODAY TOTAL LINES 3-6 ON DAILY LOG</p> <p>DAY OF MO</p> <p>LAST 7 DAYS OF PRECEDING MONTH</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <th>TOTAL HOURS ON-DUTY LAST 7 DAYS</th> <th>TOTAL HOURS AVAILABLE TO CDROM (70 HOURS MINUS COL. A)</th> <th>TOTAL HOURS ON-DUTY LAST 8 DAYS</th> </tr> </thead> </table>					A	B	C	TOTAL HOURS ON-DUTY LAST 7 DAYS	TOTAL HOURS AVAILABLE TO CDROM (70 HOURS MINUS COL. A)	TOTAL HOURS ON-DUTY LAST 8 DAYS	<p>60 HRS/7 DAY DRIVER'S ONLY</p> <p>HOURS WORKED TODAY TOTAL LINES 3-6 ON DAILY LOG</p> <p>DAY OF MO</p> <p>LAST 6 DAYS OF PRECEDING MONTH</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <th>TOTAL HOURS ON-DUTY LAST 6 DAYS</th> <th>TOTAL HOURS AVAILABLE TO CDROM (60 HOURS MINUS COL. A)</th> <th>TOTAL HOURS ON-DUTY LAST 7 DAYS</th> </tr> </thead> </table>					A	B	C	TOTAL HOURS ON-DUTY LAST 6 DAYS	TOTAL HOURS AVAILABLE TO CDROM (60 HOURS MINUS COL. A)	TOTAL HOURS ON-DUTY LAST 7 DAYS
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2						2	8	27 1/2	47 1/2												
3						3	9	46 1/2	46 1/2												
4						4	0	46 1/2	46 1/2												
5						5	0	57 1/2	46 1/2												
6						6	9 1/2	39	47												
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(17)

McKesson
Operations

Section	Reference	Page	End
TRANSPORTATION	30.55	1	
Subject	Issue Date	Effective Date	
U.S. DEPARTMENT OF TRANSPORTATION (DOT) HAZARDOUS MATERIALS REGULATIONS	9/15/85	9/15/85	

GENERAL

Nine printings from DOT follow. Some of this information may appear elsewhere in this manual, in your Regional procedures guide, or on wall charts you may have. However, proper compliance with DOT Hazardous Materials Regulations is imperative and cannot be overstated. These printings are designed to offer clarification and assistance to shipping supervisors.

These printings do not contain or refer to all of the DOT requirements for shipping hazardous materials. For specific details refer to Code of Federal Regulations (CFR) Title 49, Parts 100-199.

- Exhibit 1 DOT Hazardous Materials Warning Labels -
Note the general guidelines on use of labels on the back page of this chart.
- Exhibit 2 Indicators of Hazardous Materials Shipment Violations - As a shipper, you are responsible. Please be reminded that on inter-branch or repack items, it is your responsibility that these guides be observed even if they have been repacked or shipped to you incorrectly. THE SHIPPER IS RESPONSIBLE.
- Exhibit 3 Guide for Shippers - This offers a step-by-step aid to compliance.
- Exhibit 4 Guide for Markings
- Exhibit 5 Guide for Carriers
- Exhibit 6 Sources of Warning Labels and Placards
- Exhibit 7 Guide for Reuse of Packaging Containers
- Exhibit 8 Hazardous Materials Definitions
- Exhibit 9 Guide for H/M Shipping Papers

McKesson
Operations

Section	Reference	Page	End
TRANSPORTATION	30.55	2	X
Subject	Issue Date	Effective Date	
U.S. DEPARTMENT OF TRANSPORTATION (DOT) HAZARDOUS MATERIALS REGULATIONS	9/15/85	9/15/85	

DOT
INFORMATION
NUMBER

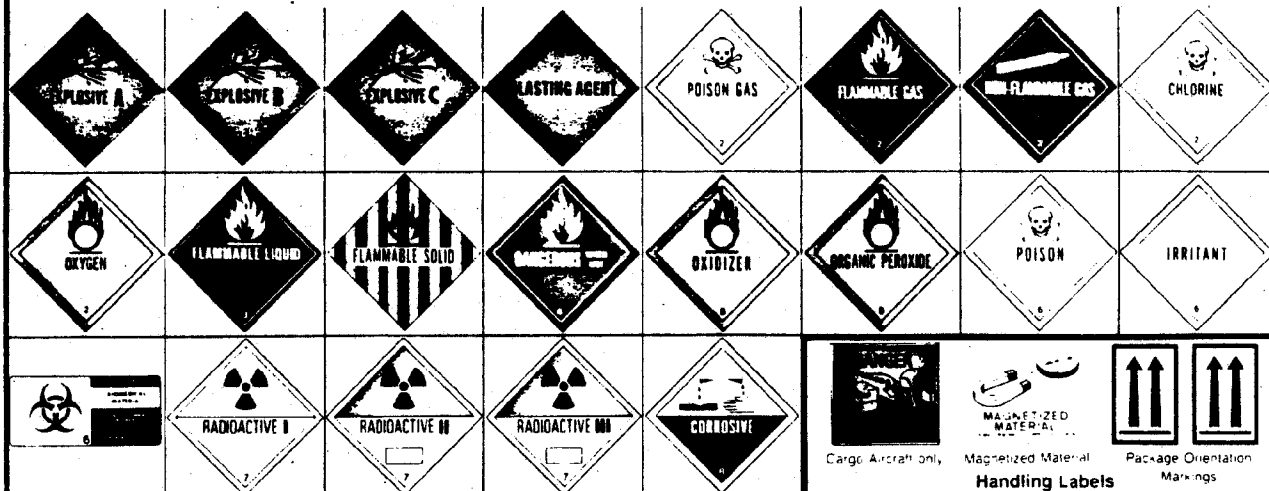
The Department of Transportation has a telephone number whereby truck drivers, operators of trucking companies, and the general public can obtain information on federal motor carrier safety and on hazardous materials regulations. Callers also can request applicable publications and can get information on the functions and responsibilities of the Bureau of Motor Carrier Safety. This service is available Monday through Friday from 7:30 a.m. until 4:00 p.m. EDT.

1. Motor Carrier Regulations - (202) 426-1724
2. Hazardous Materials Regulations - (202) 426-2075

Hazardous Materials Warning Labels

DOMESTIC LABELING

CHEM OP 30.55 Exhibit 1
9/15/85 9/15/85



General Guidelines on Use of Labels

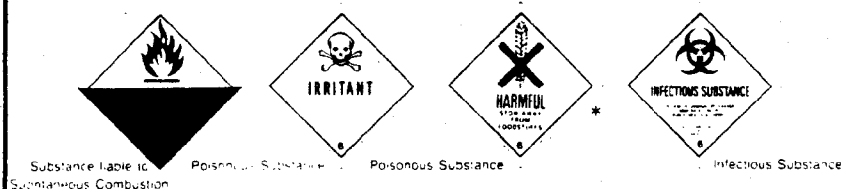
- Labels illustrated above are normally for domestic shipments. However, some air carriers may require the use of International Civil Aviation Organization (ICAO) labels.
- Domestic Warning Labels may display UN Class Number, Division Number, and Compatibility Group for Explosives only (Sec. 172.407(g)).
- Any person who offers a hazardous material for transportation **MUST** label the package if required (Sec. 172.400(a)).
- Label(s) when required must be printed on or affixed to the surface of the package near the proper shipping name (Sec. 172.406(a)).
- When two or more different labels are required, display them next to each other (Sec. 172.406(c)).
- Labels may be affixed to packages (even when not required by regulations) provided each label represents a hazard of the material in the package (Sec. 172.401).
- The Hazardous Materials Tables, Sec. 172.101 and 172.102 identify the proper label(s) for the hazardous materials listed.

UN Class Numbers

Hazardous materials class numbers associated with the hazard classes

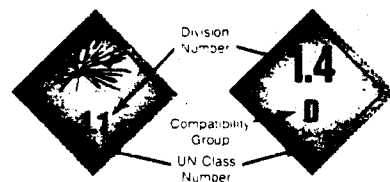
- Class 1—Explosives
- Class 2—Gases (Compressed, Liquefied or dissolved under pressure)
- Class 3—Flammable liquids
- Class 4—Flammable solids or Substances
- Class 5—Oxidizing Substances
- Class 6—Poisonous and infectious Substances
- Class 7—Radioactive Substances
- Class 8—Corrosives
- Class 9—Miscellaneous dangerous Substances

INTERNATIONAL LABELING



EXAMPLES OF INTERNATIONAL LABELS

- These are examples of International Labels not presently used for domestic shipments.
- Text, when used internationally may be in the language of the country of origin.
- Most of the domestic labels (illustrated above) may be used internationally.
- Text is mandatory on Radioactive Material, St Andrews Cross, and Infectious Substance labels.



EXAMPLES OF EXPLOSIVE LABELS

- The NUMERICAL DESIGNATION represents the CLASS or DIVISION.
- ALPHABETICAL DESIGNATION represents the COMPATIBILITY GROUP (for Explosives Only).
- DIVISION NUMBERS and COMPATIBILITY GROUP combinations can result in over 30 different Explosives labels (see IMDG Code/ICAO).

For complete details, refer to one or more of the following:

- Code of Federal Regulations, Title 49, Transportation, Parts 100-199 (All Modes)
- International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air (Air)
- International Maritime Organization (IMO) Dangerous Goods Code (Water)
- Canadian Transport Commission (CTC) Regulations (Rail)



U.S. Department of Transportation
**Research and Special Programs
Administration**

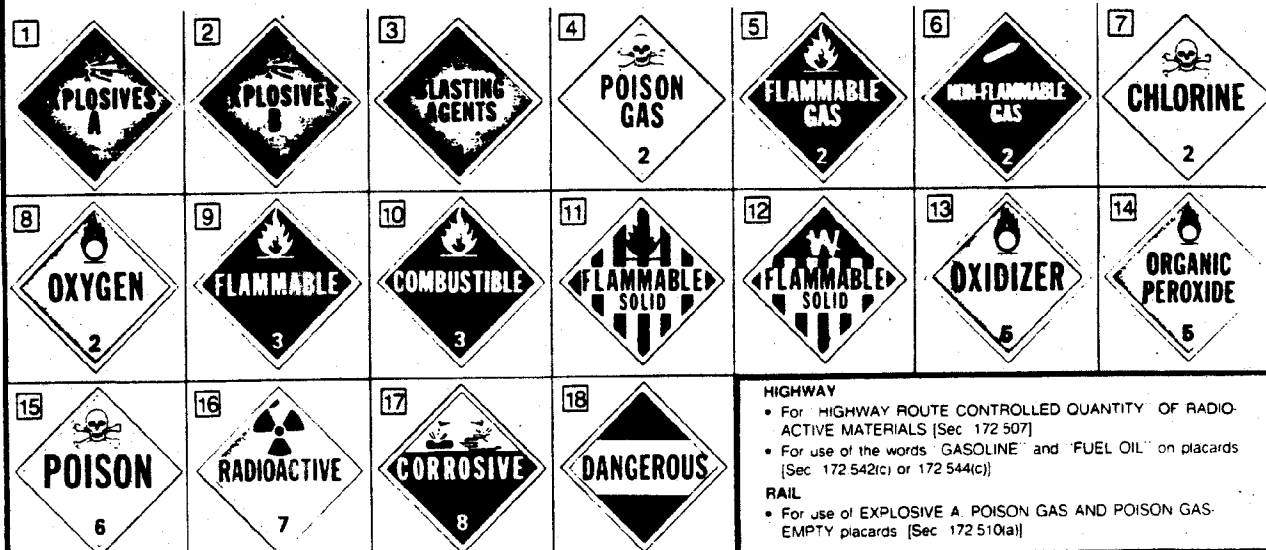
Materials Transportation Bureau
Washington, D.C. 20590

CHART 8
JANUARY 1985

Hazardous Materials Warning Placards

DOMESTIC PLACARDING

Illustration numbers in each square (1 through 18) refer to TABLES 1 and 2 below.



HIGHWAY

- For HIGHWAY ROUTE CONTROLLED QUANTITY OF RADIOACTIVE MATERIALS [Sec. 172.507]
- For use of the words "GASOLINE" and "FUEL OIL" on placards [Sec. 172.542(c) or 172.544(c)]

RAIL

- For use of EXPLOSIVE A, POISON GAS AND POISON GAS-EMPTY placards [Sec. 172.510(a)]

TABLE 1

HAZARD CLASSES	*NO.
Class A explosives	1
Class B explosives	2
Poison A	4
Flammable solid (DANGEROUS WHEN WET label only)	12
Radioactive material (YELLOW III label)	16
Radioactive material	
Uranium hexafluoride fissile (containing more than 10% U235)	16 & 17
Uranium hexafluoride low-specific activity (containing 10% or less U235)	16 & 17

NOTE: For details on the use of Tables 1 and 2 see Sec. 172.504 (See footnotes at bottom of tables.)

Guidelines

- Placard motor vehicles, freight containers, and rail cars containing any quantity of hazardous materials listed in TABLE 1
- Placard motor vehicles and freight containers containing 1,000 pounds or more gross weight of hazardous materials classes listed in TABLE 2
- Placard freight containers 640 cubic feet or more containing any quantity of hazardous material classes listed in TABLES 1 and/or 2 when offered for transportation by air or water. Under 640 cubic feet, see Sec. 172.512(b)
- Placard rail cars containing any quantity of hazardous materials classes listed in TABLE 2 except when less than 1,000 pounds gross weight of hazardous materials are transported in Trailers or Containers on Flat Car Service

TABLE 2

HAZARD CLASSES	*NO.
Class C explosives	18
Blasting agent	3
Nonflammable gas	6
Nonflammable gas (Chlorine)	7
Nonflammable gas (Fluorine)	15
Nonflammable gas (Oxygen, cryogenic liquid)	8
Flammable gas	5
Combustible liquid	10
Flammable liquid	9
Flammable solid	11
Oxidizer	13
Organic peroxide	14
Poison B	15
Corrosive material	17
Irritating material	18

INTERNATIONAL PLACARDING

- Most international placards are identical (color and pictorial symbols) to the Domestic placards illustrated above
- International placards are enlarged ICAO or IMO labels (See International Labeling—Other side)
- Placard MUST correspond to hazard class of material

- Placard ANY QUANTITY of hazardous materials when loaded in FREIGHT CONTAINERS, PORTABLE TANKS, RAIL CARS and HIGHWAY VEHICLES

- International placards may be used in addition to DOT placards for international shipments

When required, *Subsidiary Risk placards* must be displayed in the same manner as *Primary Risk placards*. Class numbers are not shown on Subsidiary Risk placards.

- COMPATIBILITY GROUP DESIGNATORS must be displayed on EXPLOSIVES PLACARDS
- UN CLASS NUMBERS and DIVISION NUMBERS MUST be displayed on hazard class placards when required

UN and NA Identification Numbers

- The four digit UN or NA numbers must be displayed on all hazardous materials packages
- UN (United Nations) or NA (North American) numbers are found in the Hazardous Materials Tables, Sec. 172.101 and the Optional Hazardous Materials Tables, Sec. 172.102 (CFR, Title 49, Parts 100-199)
- UN numbers are displayed in the same manner for both Domestic and International shipments
- NA numbers are used only in the USA and Canada

When hazardous materials are transported in Tank Cars, Cargo Tanks and Portable Tanks, UN or NA numbers must be displayed on

PLACARDS OR ORANGE PANELS



Appropriate Placard must be used



EUROPEAN NUMBERING SYSTEM—

Top Number—Hazard Index (Identification of Danger 2 or 3 figures: Example 33 highly inflammable liquid)



Bottom Number - UN Number of substance Example 1088 ACETAL

For more complete details on Identification Numbers see Sec. 172.300 through 172.338



US Department
of Transportation
Research and
Special Programs
Administration

CHEM OP 30.55 Exhibit 2
9/15/85 9/15/85

Indicators of Hazardous Materials Shipment Violations

This is a partial list of things which you as a shipper, container manufacturer, or carrier may use to spot check your compliance with the DOT Hazardous Materials Regulations. As stated in the title, these are indicators of violations and not necessarily violations in and of themselves.

The hazardous materials regulations for shippers are organized in Parts 171, 172, 173, 178 and 179 in the Code of Federal Regulations (CFR), Title 49, Parts 100-199, as communication regulations and general requirements. When a compliance inspection is made, documentation, marking, labeling and packaging are observed for discrepancies. With this list as a guide, you may spot check your own documentation, marking, labeling and packaging for compliance. When using this information, remember this is intended to be used as an aid and does not cover all aspects of the regulations.

I. CLASSIFICATION AND PROPER SHIPPING NAME

- A. Improper classification of hazardous materials.
- B. Failure to properly classify material having more than one hazard.
- C. Improper description and/or proper shipping name for material being shipped.
- D. Omission of technical name of material following n.o.s. description of material offered for export by vessel.
- E. The letters "RQ" not displayed in association with the proper shipping name when required.

II. PACKAGING (CONTAINERS IN GENERAL)

- A. Use of DOT specification containers which are not authorized for the commodity being shipped.
- B. Use of containers that are leaking.
- C. Manufacturing and marking containers as meeting a DOT specification when they do not meet the specification.
- D. Packagings exceeding maximum quantity limitations for materials.
- E. Packages improperly marked.
- F. Offering for shipment improperly packaged material.
- G. Consignee or consignor's name marking omitted from packaging.
- H. Omission of identification numbers on packagings.

III. CONTAINERS (MISCELLANEOUS)

A. STEEL

1. Labeled containers (without further overpack) with no DOT specification marking (commonly found are 5 gallon 29 guage metal pails and 5 gallon rectangular cans).
2. Packages of hazardous materials with temporary repairs.
 - a. Damaged, sealed with tape, putty, chewing gum, or screws.
 - b. Shipped upside down.
3. Labeled containers in improper condition.
 - a. Dented.
 - b. Rusted or corroded. (NOTE: These are judgemental decisions).
4. Labeled containers on which specification markings are illegible.
5. Labeled reused containers marked "NRC" (look for old date of manufacturer, dents, rust, and paint layers).
6. Labeled reused containers marked "STC" and/or 17C, 17E, and 17H with no reconitioner's marking.
7. Labeled reused containers with a reconitioner's marking that is not a DOT 17C, 17E or 17H container.
8. Labeled 55 gallon open-head drums with 2 rolling hoops and/or less than 5/8" ring bolt, non-drop forged ring lugs, and/or "lever lock" ring closures. (Good possibility of non-DOT specification.)
9. Imported drums marked as meeting the DOT hazardous materials regulations.

B. CORRUGATED FIBERBOARD

1. Boxes with no DOT specification marking when inside packagings larger than the "limited quantity" exception for the commodity and specification packaging is required.
2. Boxes marked with DOT specification markings which are poorly constructed (i.e., gaps, uneven closures, seams and joint separation).
3. If inner flaps do not meet, are fill-in pieces used to fill void?
4. Boxes damaged by water.
5. Improperly closed boxes (look for masking tape, cellophane tape, and string).
6. Leaking containers.
7. Non-DOT specification fiberboard box used in lieu of specification container when required.

C. POLYETHYLENE CONTAINERS

1. Open-head polyethylene containers (used for materials not authorized to be in them).
2. Illegibly marked containers.
3. Leaking containers offered for transportation.
4. When poison is shipped, is the container marked POISON?

D. FIBER DRUMS

1. Non-DOT specification fiber drums.
2. Fiber drums constructed of materials weaker than required by the specification.
3. Use of fiber drum marked DOT-21P without inside polyethylene liner.
4. Using fiber drum marked "STC" more than once for hazardous materials.
5. Fiber drum damaged by forklift truck.
6. Improper markings on containers for the commodity being shipped.

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E. CYLINDERS

1. Re-use of single-use cylinders such as DOT Specification 39.
2. Cylinders in use beyond test date.
3. Cylinders in improper condition:
 - a. No valve protection
 - b. Bulge in side
 - c. Dented or corroded
 - d. Defective valve
4. Cylinders re-filled by other than the owner of the cylinder without permission.
5. Cylinders improperly marked (duplication of serial numbers).
6. Cylinders offered for transportation without proper identification of contents.
7. Identification symbols not registered with the Bureau of Explosives or the Department of Transportation.
8. Illegible cylinder markings.

F. PORTABLE TANKS

1. Name of owners or lessee omitted on tank.
2. No labels and/or placards displayed on tank containing hazardous materials.
3. No identification number displayed on the placard or on an orange panel.

G. CARGO TANKS

1. Using a cargo tank, marked for one hazardous material, for another hazardous material without proper identification of contents.
2. Improperly marked, e.g. size of marking or not marked in contrasting color.
3. Omission of the marking "QT" (Quenched and Tempered Steel) or "NQT" (other than Quenched and Tempered steel), when required on cargo tank.
4. Omission of identification number on placard or orange panel.

IV. MARKING OF CONTAINERS

- A. No commodity description (proper shipping name) on the container.
- B. No name and address of consignee or consignor on the container.
- C. No DOT Exemption number on containers shipped under DOT Exemptions.
- D. Container markings not in a contrasting color.
- E. Container of liquid hazardous material not marked on outside "THIS END UP" or "THIS SIDE UP."
- F. Gross weight not marked on Radioactive Materials packages weighing over 110 pounds.
- G. Reconditioned drums improperly marked.
- H. USA not included as part of the DOT Specification markings for Radioactive Materials packages destined for export.
- I. Portable tanks not marked with proper name of the hazardous material.
- J. Omission of identification numbers (when required) on placard or orange panel.

V. LABELING

- A. No labels on outer container to represent mixed packaging of hazardous materials (materials with more than one hazard - label labeling).
- B. Label on the container not consistent with the hazard class on the shipping papers when appropriate.
 - C. Use of obsolete labels.
- D. Color and/or size of label does not meet the standards of the CFR, Title 49, Sec. 172.407.
- E. No label on container of hazardous materials when required.
- F. No label on shipments destined for air transport.
- G. Labeling containers not authorized to be labeled.
- H. No label on "LIMITED QUANTITIES" offered for air transportation.
- I. Less than two Radioactive Materials labels (White I, Yellow II or Yellow III) on containers (two opposite sides).

VI. PLACARDING

- A. Failure to placard vehicle requiring placarding.
- B. Failure to use more than one kind of placard to indicate more than one hazard class of material loaded within vehicle.
- C. Freight container containing hazardous material over 640 cubic feet not placarded.
- D. Placards not applied to both sides of cargo tank.
- E. Placarding material not authorized to be placarded.
- F. Omission of identification numbers (when required) on placard or orange panel.

VII. SHIPPING PAPERS

- A. No proper shipping name and/or classification of hazardous material entered on shipping papers.
- B. Proper shipping name and/or classification abbreviated.
- C. No certification for shipment.
- D. No wordage for "LIMITED QUANTITY" on shipments excepted from specification packaging and labeling.
- E. No DOT Exemption number on shipments moving under DOT Exemption.
- F. Color of label indicated in lieu of the proper hazard class.
- G. Improper format for hazardous materials description on shipping papers, e.g., HM entries not first, highlighted or no HM column.
- H. No identification number (UN or NA) on shipping paper.

THIS MATERIAL MAY BE REPRODUCED WITHOUT SPECIAL PERMISSION FROM THIS OFFICE

NOTE: Send comments or suggestions to the address listed below:

Information Services Division, DMT-11
Office of Operations and Enforcement
Materials Transportation Bureau
U.S. Department of Transportation
Washington, D.C. 20590

REVISED JANUARY 1985

McK00343



US Department
of Transportation
**Research and
Special Programs
Administration**

CHEM OP 30.55 Exhibit 3
9/15/85 9/15/85

HAZARDOUS MATERIALS TRANSPORTATION GUIDE FOR SHIPPERS

USE OF GUIDE - This Guide is presented as an aid to shippers of hazardous materials. It does not contain or refer to all of the DOT requirements for shipping hazardous materials. For specific details, refer to all of the DOT requirements for shipping hazardous materials. For specific details, refer to the Code of Federal Regulations (CFR), Title 49, Transportation, Parts 100-199.

The following is offered as a step-by-step program to aid compliance with the applicable DOT Regulations.

- STEP 1 - DETERMINE THE PROPER SHIPPING NAME** - The shipper must determine the proper shipping name of the materials as listed in the Hazardous Materials Table, Sec. 172.101, Column (2).
- STEP 2 - DETERMINE THE HAZARD CLASS OR CLASSES**
- A. Refer to the Table, Sec. 172.101, Column (3) and locate the hazard class of the material.
 - B. If more than one class is shown for the proper shipping name, determine the proper class by definition.
 - C. If the materials have more than one hazard, classify the material based on the order of hazards in Sec. 173.2.
- STEP 3 - SELECT THE PROPER IDENTIFICATION NUMBERS**
- A. Refer to the Table, Sec. 172.101, Column (3a) and select the Identification Number (ID) that corresponds to the proper shipping name and hazard class.
 - B. Enter the ID number(s) on the shipping papers and display them, as required, on packagings, placards and/or orange panels.
- STEP 4 - DETERMINE THE MODE(S) OF TRANSPORT TO ULTIMATE DESTINATION**
- A. As a shipper, you must assure yourself that the shipment complies with the various modal requirements.
 - B. The modal requirements may affect the following: (1) Packaging; (2) Quantity per Package; (3) Marking; (4) Labeling; (5) Shipping papers; (6) Certification.
- STEP 5 - SELECT THE PROPER LABEL(S) AND APPLY AS REQUIRED**
- A. Refer to the Table, Sec. 172.101, Column (4) for required label(s).
 - B. For details on labeling refer to: (1) Additional Labels, Sec. 172.402; (2) Location of Labels, Sec. 172.406; (3) Packagings (Mixed or Consolidated), Sec. 172.404(a) and (b); (4) Packages Containing Samples, Sec. 172.402(h); (5) Radioactive Materials, Sec. 172.403; (6) Authorized Label Modifications, Sec. 172.405.
- STEP 6 - DETERMINE AND SELECT THE PROPER PACKAGES**
- A. Refer to the Table, Sec. 172.101, Column 5(a) for exceptions and Column (5b) for authorized packagings. Consider the following when selecting an authorized container: Quantity per package; Cushioning material, if required; Proper closure and reinforcement; Proper pressure; Outage; etc. as required.
 - B. If packaged by a prior shipper, make sure the packaging is correct and in proper condition for transportation.
- STEP 7 - MARK THE PACKAGING (INCLUDING OVERPACKS)**
- A. Apply the required markings (Sec. 172.300); Proper shipping name and ID number, when required (Sec. 172.301); Name and address of Consignee or Consignor (Sec. 172.306).
 - B. For details and other required markings, See Sections 172.300 through 172.338.

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STEP 8 - PREPARE SHIPPING PAPERS

- A. The basic requirements for preparing shipping papers include: Proper Shipping name; Hazard class; ID number; Total quantity; Shipper's certification.
- B. Make all entries on the shipping papers using the information required and in proper sequence (Sec. 172.202).
- C. For additional requirements, see Sections 172.200 through 172.205.

STEP 9 - CERTIFICATION

- A. Each shipper must certify by printing (manually or mechanically) on the shipping papers that the materials being offered for shipment are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable DOT Regulations (Sec. 172.204).
- B. For surface shipment, see Sec. 172.204(a) and (b); for air shipments, see Sec. 172.204(c).

STEP 10 - LOADING, BLOCKING AND BRACING - When loading hazardous materials into the transport vehicle or freight container, each package must be loaded, blocked and braced in accordance with the requirements for the mode of transport.

- A. If the shipper loads the freight container or transport vehicle, the shipper is responsible for the proper loading, blocking and bracing of the materials.
- B. If carrier personnel do the loading, the carrier is responsible.

STEP 11 - DETERMINE THE PROPER PLACARD(S) - Each person who offers hazardous materials for transportation must determine that the placarding requirements have been met.

- A. For Highway, unless the vehicle is already correctly placarded, the shipper must provide the required placard(s) and required Identification number(s) (Sec. 172.506).
- B. For Rail, if loaded by the shipper, the shipper must placard the rail car if placards are required. (Sec. 172.508)
- C. For Air and Water shipments, the shipper has the responsibility to apply the proper placards.

STEP 12 - HAZARDOUS WASTE/HAZARDOUS SUBSTANCE

- A. If the material is classed as a hazardous waste or hazardous substance, most of the above steps will be applicable.
- B. Pertinent Environmental Protection Agency Regulations are found in the Code of Federal Regulations, Title 40, Part 262.

"It is the duty of each person who offers hazardous materials for transportation to instruct each of his officers, agents, and employees having any responsibility for preparing hazardous materials for shipment as to the applicable regulations. . ." (Section 173.1(b))

This means that shippers are required to make certain that those officers, agents and employees who have any responsibility for preparing or offering hazardous materials for transportation are thoroughly instructed concerning the regulations as they apply to their job functions.

NOTE: The following suggestions will help to comply with this requirement:

- 1. Identify all personnel who have hazardous materials transportation responsibilities.
- 2. Determine what additional instruction or training each needs.
- 3. Assure that those needing instruction receive it.
- 4. Maintain record of training.
- 5. Periodically review training needs in order to maintain the required expertise.

AS A FINAL CHECK AND BEFORE OFFERING THE SHIPMENT FOR TRANSPORTATION, VISUALLY INSPECT YOUR SHIPMENT.

NOTE: This material may be reproduced without special permission from this office. Any comments or recommendations should be sent to:

INFORMATION SERVICES DIVISION, DMT-II
OFFICE OF OPERATIONS AND ENFORCEMENT
MATERIALS TRANSPORTATION BUREAU
U.S. DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20590



US Department
of Transportation

Research and
Special Programs
Administration

CHEM OP 30.55 Exhibit 4
9/15/85 9/15/85

GUIDE FOR MARKINGS

USE OF GUIDE - This guide was prepared as an aid to shippers and carriers of hazardous materials. It does not contain or refer to all of the DOT requirements for marking. For specific details, refer to the appropriate Sections of the Code of Federal Regulations, Title 49, Transportation, Parts 100 - 199.

NOTE: Rulemaking proposals for new and/or existing regulations are outstanding or contemplated. Keep up to date with the changes.

MARKING - means placing on the outside of a shipping container, one or more of the following: the descriptive name, proper shipping name, hazard class, identification number, instructions, caution and/or weight. Marking also includes any required specification marks on the inside or outside shipping container.

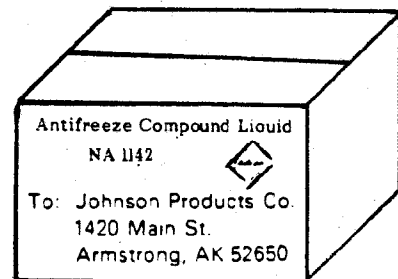
DESCRIPTIVE INFORMATION

I. GENERAL REQUIREMENTS (Sec. 172.300-172.304)

A. **UNLESS SPECIFICALLY EXCEPTED, ALL** containers of hazardous materials must be marked with: (1) the proper shipping name(s), (2) UN or NA Identification number(s) of the contents (Sec. 172.101 or 172.102), and (3) the name and address of either the consignee or consignor.

B. All markings must be:

1. Durable and in English, and printed on (or affixed to the surface of) the package (or on a label, tag or sign);
2. On a background of a sharply contrasting color, and unobscured by labels or attachments; and
3. Placed away from other markings that could reduce effectiveness.



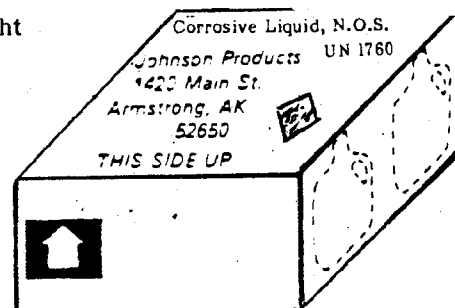
II. SPECIFIC REQUIREMENTS

A. HAZARDOUS SUBSTANCES

1. When the proper shipping name for a mixture or solution does not identify the material making it a hazardous substance, the name or names of such hazardous substance materials as shown in Sec. 172.101 or 172.102 must be shown on the packaging.
2. Hazardous materials in packagings (of 110 gallons or less and containing a hazardous substance) must display "RQ" in association with the proper shipping name (Example: Benzoyl chloride (RQ-100/454)).

B. INSIDE CONTAINERS FOR LIQUIDS: (Sec. 172.312)

1. Must be packed with closures in the upright position;
2. Must be marked on the outside with "THIS END UP" or "THIS SIDE UP"; and
3. Must use arrow symbol to show upright orientation of packages. (See ANSI Standard MH6.11968 "Pictorial Marking for Handling Goods"). Example: "THIS SIDE UP" or "THIS WAY UP."



C. CONTAINERS - OVERPACKS

1. When a DOT Specification container is overpacked in another container, the overpack must meet the requirements of Section 173.21 and Section 173.24.
2. Outside container must be marked in accordance with Section 173.25 (Examples: "THIS SIDE UP" or INSIDE PACKAGES COMPLY WITH PRESCRIBED SPECIFICATIONS.")

D. CONTAINERS - CYLINDERS

1. All cylinders must be marked in accordance with Section 173.34 and Section 173.301 through Section 173.306.
2. Reinspected and Retested Cylinders must be marked (Section 173.34(e)(6)).

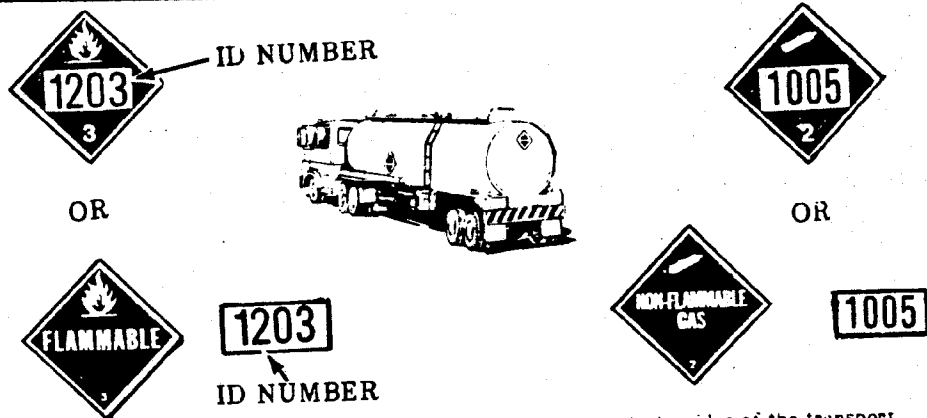
III. TANKS

A. PORTABLE TANKS (Sections 172.326 and 172.332) - Portable tanks must be marked with:

1. Proper shipping name - in letters at least 2 inches high and on to opposite sides;
2. Identification number - UN or NA (United Nation or North American) identification number on: TWO OPPOSITE SIDES (near proper shipping name) of tanks of less than 1,000 gallons capacity; on EACH SIDE AND EACH END of tanks of more than 1000 gallon capacity;
3. Name of owner or lessee;
4. All inlets and outlets (except safety relief valves) when carrying compressed gases (DOT-51)
5. Whether or not the inlets and outlets communicate with vapor or liquid (Section 178.245-6(b)).

B. CARGO TANKS - HIGHWAY (COMPRESSED GASES) (Sec. 172.328) -Cargo tanks must be marked with:

1. Proper shipping name OR appropriate common name (such as "Refrigerant Gas") Letters must be at least 2 inches high (Sec. 172.101 or 172.102) on each end and each side.
2. Identification number - (Section 172.101 or 172.102).
3. Inlets and outlets (except safety relief valves - applies to DOT MC 331 tanks
4. Whether the inlets and outlets communicate with vapor or liquid, when the tank is filled to its maximum permitted filling density (Section 178.337-9(c)).
5. The accurately name of contents of the tank.



If the ID number is not displayed on the ends of the vehicle, check the sides of the transport vehicle.
NOTE: When ID numbers are displayed on placards, orange panels are not required. When ID is displayed on orange panels, placards are ALSO REQUIRED.

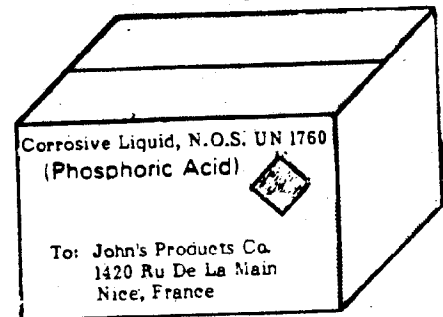
C. **TANK CARS (Sec. 172.330)** - Certain tank cars are required to be marked on each side and each end (Sec. 172.332 and Parts 173 and 179 for specific details). IF REQUIRED TO BE MARKED, they must include:

1. Proper shipping name OR appropriate common name in letters at least 4 inches high at least 5/8 inch stroke.
2. Identification numbers - Display the appropriate number(s) on placards or orange panels (Sec. 172.101 and 172.102).
3. The accurate name of the contents contained in the tank.

NOTE: For requirements for multi-unit tank car tanks, see Sec. 179.300 through 179.302.

IV. EXPORT BY WATER (Sec. 172.302)

- A. All authorized "n.o.s." entries for export by water must have the technical name(s) of the material immediately following the proper shipping name.
- B. For mixtures of two or more hazardous materials, the technical name of at least two components must be identified (Sec. 172.101 or 172.102).

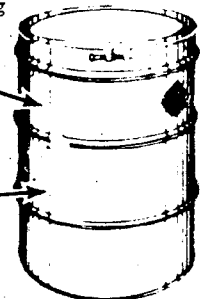


V. RADIOACTIVE MATERIALS (Sec. 172.310)

- A. Gross weight must be marked on container weighing over 110 pounds.
- B. "TYPE A" or "TYPE B," (as appropriate) in letters at least 1/2" high.
- C. "USA" must follow the specification markings or package certification on export shipments.

Radioactive Material, Fissile, N.O.S. UN 2918
USA/0777/ B(U)F Gross WT 320 kg
Fissile Class II, USA Type B

To: John's Products Co.
1420 Ru De La Main
Nice, France

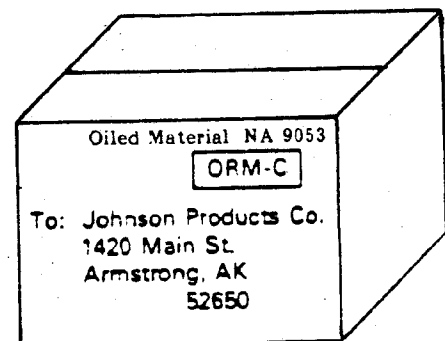


VI. OTHER REGULATED MATERIALS (ORM's) (Sec. 172.316)

- A. Place ORM immediately following, or below, the proper shipping name.
- B. Marking must be within a rectangular border - approximately 1/4 inch large on each side of "ORM__."
- C. Use one of the following:

A. ORM-A	C. ORM-B	E. ORM-D
B. ORM-B	D. ORM-C	F. ORM-D-AIR
		G. ORM-E

NOTE: By these markings, the shipper certifies that the material is properly described, classed, packaged, marked, and labeled AND in proper condition for transportation. A certificate is ALSO required on the shipping paper (Sec. 172.316(c)).



OTHER MARKING REQUIREMENTS

- I. **REQUALIFIED CONTAINERS - DRUMS** (Marked by reconditioner)
Some steel containers in the DOT Series (DOT 17C, 17E and 17H) may be qualified for reuse by a DOT registered reconditioner of drums. The drums are stripped of labels, exemption numbers and other markings. They are reconditioned to meet Sec. 173.28(m) and marked with the appropriate registration assigned number.
- II. **CYLINDERS & TANKS** - (Marked with inspection and/or retest date). Reusable cylinders, portable tanks, cargo tanks and tank cars must be either visually inspected or retested at periodic intervals. The date of the requalification must be on the container (see Sec. 173.24, 173.31, 173.32, 173.33 and 173.34).
- III. **CARGO HEATERS** - Cargo heaters authorized for use with flammable liquid or gas must be marked in accordance with Sec. 177.834(1)(2)(e) and (f).
- IV. **MOTOR VEHICLES** - A carrier may not moved a transport vehicle containing hazardous material unless the vehicle is marked in accordance with Part 172 or unless an emergency exists (see Sec. 177.823 and 177.824 for details).

SPECIFICATION CONTAINERS

- I. **GENERAL** - Specification containers must be marked with DOT specification numbers under which the containers are made (Parts 178 and 179). The manufacturer's name and address or symbol must be registered with the Associate Director for the Office of Hazardous Materials Regulation. Duplicate symbols are not authorized.
- II. **MARKINGS** - All containers must comply with the marking requirements of Section 173.24, 178 and 179. Exception for Canadian and other import/export situations are found in Sec. 171.12 and 173.8.

NOTE: For certain containers, specific detailed information (such as original test date information and type of material) are required (See Parts 178 and 179). As a final check before offering a shipment for transportation, visually inspect your shipment.

This handout does not contain all the marking requirements. It is designed as a guide only. For details on markings, consult the Code of Federal Regulations, Title 49, Parts 100-199.

As a final check before offering a shipment for transportation, visually inspect your shipment.

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INFORMATION SERVICES DIVISION, DMT-II
OFFICE OF OPERATIONS AND ENFORCEMENT
MATERIALS TRANSPORTATION BUREAU
U.S. DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20590

REVISED JANUARY 1985



U.S. Department
of Transportation

Research and
Special Programs
Administration

CHEM OP 30.55 Exhibit 5
9/15/85 9/15/85

HAZARDOUS MATERIALS TRANSPORTATION

GUIDE FOR CARRIERS

USE OF GUIDE - This Guide was prepared as an aid to carriers of hazardous materials. It does not contain or refer to all of the DOT requirements for transporting hazardous materials. For specific details, refer to the Code of Federal Regulations (CFR), Title 49, Transportation, Parts 100-189.

Basically, all "for hire" carriers and all "private carriers" are subject to the same or at least very similar DOT hazardous materials regulations. This is true regardless of mode, engaged in commerce and transporting hazardous materials.

Containerization and other modern freight handling procedures frequently prevent initial carriers from making physical inspections of the freight. It is more difficult for interline (secondary) carriers to determine the physical condition of freight or regulatory compliance. Carriers, therefore, must frequently accept the word of shippers as to the suitability of the package and the accuracy of the material description. Therefore, it is very important to carefully review the shipping document(s) including the shippers certification. Always visually inspect the transport vehicle or freight container for leaks or potential problems.

Careful attention to the following subject areas will aid in complying with the "Carrier Regulations":

I. DETERMINE EMPLOYEE QUALIFICATIONS

"It is the duty of each such carrier to make the prescribed regulations effective and to thoroughly instruct employees in relation thereto." [Refer to CFR, Title 49, Sec. 174.7 (Rail); Sec. 175.20 (Air); Sec. 176.13 (Water); and Sec. 177.800 (Highway)].

This means that carriers are required to make certain that employees who have any responsibility for receiving, processing or transporting hazardous materials are thoroughly instructed. They must know the applicable regulations that apply to their job functions. The following suggestions will help to meet this requirement:

- A. Identify all personnel who have hazardous materials transportation responsibilities.
- B. Determine what additional instruction or training each needs (if any).
- C. Assure that those needing instruction receive and absorb the instruction.
- D. Maintain records of training.
- E. Periodically review training needs and maintain the required expertise.

II. DETERMINE CONDITION OF TRANSPORT VEHICLE

- A. Make certain that the cargo space is suitable for loading. It should be free of nails and other protruding sharp objects.
- B. Make certain that the vehicle is suitable for the material to be loaded. It must be in compliance with applicable carrier safety and hazardous material regulations, as well.

III. MAY THE SHIPMENT BE ACCEPTED FOR TRANSPORT?

"A carrier may not transport . . . any shipment of a hazardous material that is not prepared for transportation in accordance with Parts 171, 172, and 173." [Refer to CFR, Title 49, Sec. 174.3 (Rail); 175.3 (Air); 176.3 (Water); 177.801(a) (Highway)].

To comply with this provision, a carrier must:

- A. Determine that the shipping papers are prepared in proper format and are accurate and complete. At minimum, they must include the proper shipping name, ID number, hazard class, quantity and consignee (or consignor) name and address.
- B. Obtain a proper shipper's certificate (unless exempted).
- C. Determine that proper placard(s) and ID number(s) are displayed, when required.

When practical, a carrier should also determine that:

- A. Authorized packagings are used and that they are in proper condition for transportation.
- B. Each package is properly marked and labeled, when required.
- C. The freight is adequately blocked and braced to prevent movement and/or damage in transit.

IV. IS THE SHIPMENT TO BE INTERLINED?

- A. Properly prepare the material so that the secondary carrier will accept it from you. This is particularly important for intermodal and international shipments.
- B. Modal requirements may affect the following: (1) Packaging; (2) Quantity per package; (3) Marking; (4) Labeling; (5) Shipping papers; (6) Certification.

V. CARRIER LOADED FREIGHT

When the carrier loads the transport vehicle, make certain that:

- A. Documentation matches the freight.
- B. Materials are chemically compatible.
- C. Poisons are not loaded with foodstuffs (unless excepted).
- D. Damaged or leaking packages are not loaded.
- E. Freight is properly blocked and braced to prevent movement and/or damage in transit.
- F. Proper placards and ID numbers are displayed, when required.
- G. Required documentation is furnished the driver/pilot/conductor/captain.

VI. HAZARDOUS WASTE/HAZARDOUS SUBSTANCE

- A. When the material is classified as a hazardous waste or hazardous substance, there are additional registration, identification, security and documentation regulations as stated in Sections 172.205 and 172.324.
- B. Pertinent Environmental Protection Agency Regulations are found in the Code of Federal Regulations, Title 40, Part 262.

VII. INCIDENT AND/OR ACCIDENT REPORTS

The carrier who transports hazardous materials (including hazardous waste) is responsible for reporting requirement. Most incidents/accidents involving unintentional releases of hazardous materials in transportation must be reported to DOT. Detailed criteria concerning telephonic and/or written reports are published in CFR, Title 49, Sections 171.15, 171.16 and 171.17.

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INFORMATION SERVICES DIVISION, DMT-11
OFFICE OF OPERATIONS AND ENFORCEMENT
MATERIALS TRANSPORTATION BUREAU
DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20590



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

CHEM OP 30.55 Exhibit 6
9/15/85 9/15/85

SOURCES OF HAZARDOUS MATERIALS WARNING LABELS AND PLACARDS

In order to comply with the Hazardous Materials Regulations, you must use the correct labels and placards. This listing has been designed as a convenient reference for purchasing labels and placards. They must comply with the Code of Federal Regulations, Title 49, Parts 100-199, Subpart E - Labeling and Subpart F - Placarding, including Appendices A and B of Part 172.

It is the responsibility of the shipper and/or transporter to insure the labels and placards meet the specification requirements.

NOTE: The use of labels, placards and orange panels supplied by these sources or any other source by shippers and/or carriers does not relieve persons from complying with the Department of Transportation's Hazardous Materials Regulations.

CALIFORNIA

Avery Label Systems¹
777 East Foothill Blvd.
Azusa, CA 91702
(213) 969-3311

Bee Line, Inc.²
26750 Wattis Way
San Francisco, CA 94080
(415) 871-4848

California Labels Inc.¹
461 North H Street
P.O. Box 12284
Fresno, CA 93777
(209) 485-1091
(800) 742-1033 (N. Calif)

Imperial Marking Systems, Inc.³
P.O. Box 2337
990 Carden Street
San Leandro, CA 94577
(415) 562-4459

DIST. OF COLUMBIA

American Trucking Assoc., Inc.³
1516 P Street, N.W.
Washington, D.C. 20036
(202) 797-5384

FLORIDA

Creative Products International²
P.O. Box 14356
Tampa, FL 33690-0356
(813) 839-6356

GEORGIA

Southeastern Label Co.³
P.O. Box 80443
Chamblee, GA 30366
(404) 455-8816

HAWAII

Safety Systems Hawaii, Inc.³
302 Mokauea Street
Honolulu, HI 96819
(808) 847-4018

ILLINOIS

Bureau of Labels³
38 North Broadway Street
Des Plaines, IL 60016
(312) 635-7280

Labelmaster³
5724 N. Wolcott Avenue
Chicago, IL 60646
(800) 621-5808
(312) 973-5100

Legible Signs, Inc.³
2221 Nimitz Road
Rockford, IL 61110
(815) 654-0100

Related Products, Inc.¹
3223 N. Western Avenue
Chicago, IL 60618
(312) 528-2900

MICHIGAN

Labeltape Inc.¹
P.O. Box 8823
4275 Airwest Drive S.E.
Grand Rapids, MI 49508
(616) 698-8890

Quickway Staput, Inc.³
P.O. Box 1086
Muskegon, MI 49443
(616) 722-2044/739-8950

Whitlam Label Co. Inc.³
6000 Rinke
Warren, MI 48091
(313) 757-5100

MINNESOTA

Dawson Patterson Printing Inc.³
366 Wacouta Street
St. Paul, MN 55101
(612) 222-8445

Meyers Printing Company¹
Change-A-Label Division
500 South Third Street
Minneapolis, MN 55415
1-800-328-4067

NEW JERSEY

Ever Ready Label Corp.³
357 Cortlandt Street
Belleville, NJ 07109
(201) 759-5500

NEW JERSEY

Lawrence Packaging Supply³
113 North 13th Street
Newark, NJ 07107
(201) 485-4400
(212) 962-4393 (NY)

Mar-Kal Products Corp.³
105 Walnut Street
Montclair, NJ 07042
(201) 783-7155

Prest-On Products Corp.³
870 Springfield Road
Union, NJ 07083
(201) 851-9777

UNZ & Co.³
190 Baldwin Avenue
Jersey City, NJ 07306
(800) 631-3098/(201) 795-5400
(212) 344-2270

NORTH CAROLINA

Soabar Graphics³
P.O. Box J
2305 Soabar Drive
Greensboro, NC 27402
(919) 275-9371

OHIO

MPI Label Systems¹
P.O. Box 70
450 Courtney Road
Sebring, OH 44672
(216) 938-2134

Triangle Label Inc.¹
60-A Novner Drive
Cincinnati, OH 45215
(513) 772-5649

TENNESSEE

Artcraft Converters, Inc.¹
710 South Fourth Street
Memphis, TN 38101
(901) 525-1441

TEXAS

Carlton Label & Decal Inc.³
3150 Nasa Road One
Seabrook, TX 77586
(713) 334-1543
(800) 231-5988

Contact Products, Inc.³
P.O. Box 220063
Dallas, TX 75222
(214) 231-6367

WISCONSIN

W. H. Brady Co.³
727 W. Glendale Avenue
P.O. Box 571
Milwaukee, WI 53201
(414) 961-2233

J. J. Keller³
145 W. Wisconsin Avenue
Neenah, WI 54956
(414) 722-2848
1-800-558-5011

-
- 1 - Labels Only
2 - Placards Only
3 - Labels and Placards

Note: Companies not listed but would like to be placed on this listing must submit samples of their labels, placards, or orange panels to the attention of the address listed below.

THIS MATERIAL MAY BE REPRODUCED WITHOUT SPECIAL PERMISSION FROM THIS OFFICE.

Information Services Division, DMT-11
Office of Operations and Enforcement
Materials Transportation Bureau
U.S. Department of Transportation
Washington, D.C. 20590

REVISED OCTOBER 1984



Guide for Reuse of Packagings (Boxes, Kegs, Cylinders and Steel Drums)

The following information has been abstracted from Code of Federal Regulations, Title 49, Parts 100-177 and is intended to serve as an aid for in-house use when reviewing the requirement on the reuse of containers. It does not include or refer to all applicable requirements.

1. REQUIREMENTS (Sec. 173.28)

- A. CONTAINERS - Any container used more than once (refilled and reshipped after having been previously emptied) must meet the Code requirements. That is, containers must be in such condition, that they comply in all respects with the prescribed requirements. This includes container closing devices and cushioning materials.
- B. REPAIR OF CONTAINERS - Repairs to containers must be made in accordance with requirements for materials and construction as prescribed in Parts 178 and 179 of Title 49 for new containers, or as otherwise prescribed. All parts that are weak, broken, or otherwise deteriorated must be replaced.
- C. MARKING AND LABELING
 - (1) All markings applied and prescribed by the regulations must be maintained in a legible condition.
 - (2) If the prescribed markings cannot be kept plain and legible, then a metal plate, with a reproduction of the prescribed markings plainly stamped thereon may be brazed, soldered or securely fastened to the containers.
 - (3) All containers previously used for the shipment of any hazardous materials must have the old markings thoroughly removed or obliterated before being used for the shipment of other articles. These markings include the name of contents, addresses, and labels.

2. USE OF CONTAINERS (Sec. 173.28)

- A. Boxes previously used for High explosives containing a liquid explosive ingredient not contained in an inside metal container must not be used again for shipments of any character.
- B. Boxes that have been contaminated by liquid explosive composition must not be used for shipment of any character.
- C. Kegs previously used for any chlorate must not be used for shipments of any character.
- D. Metal Kegs previously used for black powder not contained in any interior package must not be used for shipment of any explosive.
- E. Containers used for shipments of etching acid, n.o.s must not be reused for shipment of any commodity.
- F. Cylinders used in anhydrous hydrofluoric acid service must comply with the requirements of Sec. 173.264(b)(1) AND must not be used in any other services.

3. REUSE OF DOT SPECIFICATIONS: 17C, 17E AND 17H STEEL DRUMS (Sec. 173.28(m))

- A. Specification 17C, 17E, and 17H steel drums which contents have been removed, may be reused as prescribed in Part 173. They can be used as packagings for shipment of flammable liquids, flammable solids, organic peroxides, oxidizers, poisons (see Sec. 173.370, radioactive materials and corrosive liquids (see Sections 173.249 and 173.249(a). However, only use if the following requirements, in addition to other requirements, of Sec. 173.28(m) are complied with PRIOR to each reuse.

NOTE: Containers that do not meet the requirement of DOT specification containers can be reused for Corrosive solids and any other hazardous materials. However, the commodity being packaged must not be capable of reacting with the steel container. The major requirements are outlined below:

1. Visual Inspection - Each drum must be thoroughly cleaned to remove all residue and foreign matter. It must be inspected for deterioration or defects. Parts that are weak, broken or otherwise deteriorated must be replaced. Closure devices and parts must be removed (if removable) and inspected for defects. Each open-head gasket must be replaced. Any drums which show evidence of deterioration such as:

- a. Visible pitting or creases,
- b. Significant reduction in parent metal thickness from rust, corrosion, metal fatigue or other material defect.

If it cannot be returned to its original shape and contour it DOES NOT QUALIFY for reuse.

NOTE: All repairs must be made in accordance with requirements for materials and construction as prescribed in the regulations for new containers.

2. Air Pressure Test for Leakage - Except for the removable head and adjacent chime area, the entire surface of each closed-head drum and each open-head drum, must be tested for leakage by constant internal air pressure.
- a. The leakage test must be conducted by (1) submersion under water; (2) completely covering the surface with soap suds or oil, or; (3) some other method that will be considered EQUALLY SENSITIVE.
 - b. Leakers shall be rejected or repaired and retested. Repairs must be made by methods used in constructing containers and NOT BY SOLDERING. The air pressure must be maintained for a period of time sufficient to permit a complete inspection for leaks. The minimum constant internal air pressure for testing must be as follows:

<u>Spec. No.</u>	<u>Capacity</u>	<u>Minimum Test Pressure</u> <u>Pounds per square inch (psi)</u>
17C	All	15 psi
17E	Over 12 gallons	7 psi
17E	12 gallons, or less	5 psi
17H	Over 12 gallons	7 psi
17H	12 gallons, or less	5 psi

B. Equally Sensitive Test -

1. Outlined below are Leakage Test Methods Considered "Equally Sensitive" for Reconditioned 17C, 17E and 17H Drums.

2. A number of questions have been raised concerning what other test methods would be considered "Equally Sensitive". Any test procedure is considered by the Office of Operations and Enforcement to be as "Equally Sensitive" as the methods specified in Section 173.28(m)(2) of the Hazardous Materials Regulations. If it—
 - a. Will subject a drum to constant internal air pressure (at equilibrium with the system closed) at the specified minimum pressure.
 - b. Utilizes an accurate pressure gauge or other measuring device which will permit readings to an accuracy of .10 psig (pounds per square inch gage pressure).
 - c. Allows for sufficient time to discover leaks; and the process is reproducible.

NOTE: A visual inspection procedure that does not employ the minimum air pressure specified MAY NOT be used to qualify a drum for reuse under Section 173.28(m)(2).

3. Other test procedures not meeting the prescribed tests or all of the above "Equally Sensitive" criteria are not considered adequate to meet the requirements of these standards unless specific approval has been obtained from the Materials Transportation Bureau.
 - a. Markings - All previous test markings, commodity identification markings, and labels must be removed.
 - (1) All drums that qualify for reuse must be marked on the body within 10 inches of the top with the following information:
 - a. "Tested"
 - b. Month and Year it was Tested.
 - c. DOT Registration Number of the reconditioner.
 - (2) Markings must be at least 1/4 inch figures and the letters on contrasting background. (See figures 1 and 2)

EXAMPLE: TESTED 2/74
DOT R1000

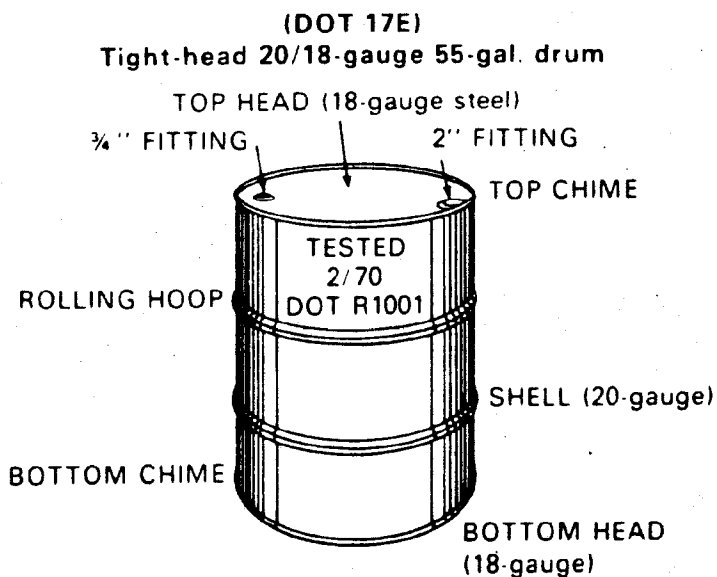


Figure 1 DOT 17E - 55-gal. drum

- b. Any drum meeting one specification which has been altered to meet another specification must be capable of meeting the new specification in all respects. Drums converted to meet another specification must bear the original specification markings. (See Figure 2)
- c. The old and new specification identification in conjunction with the markings shown above are required.

EXAMPLE: 17E/17H
TESTED 2/74
DOT R1000

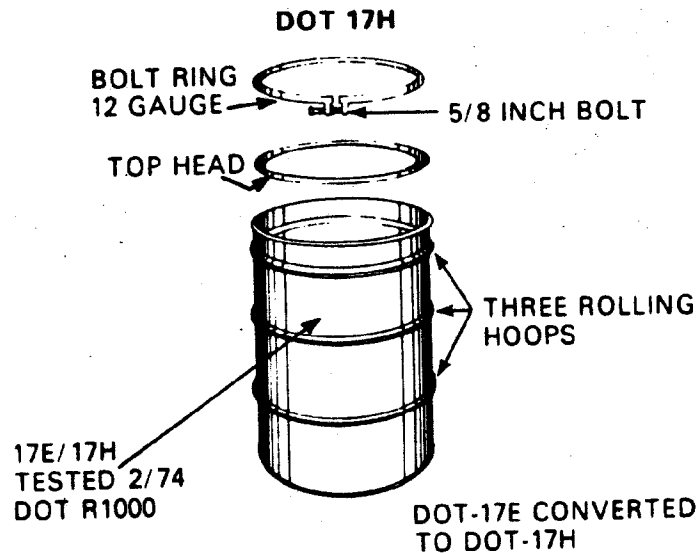


Figure 2 DOT-17E Converted to DOT-17H

- d. The DOT Registration number required for this marking must be obtained from: Associate Director for Office of Hazardous Materials Regulations, Materials Transportation Bureau, Washington, D.C. 20590.

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INFORMATION SERVICES DIVISION
OFFICE OF OPERATION AND ENFORCEMENT
MATERIALS TRANSPORTATION BUREAU
DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20590

REVISED JULY 1992



US Department
of Transportation

Research and
Special Programs
Administration

HAZARDOUS MATERIALS TRANSPORTATION

CHEM OP 30.55 Exhibit 8
9/15/85 9/15/85

HAZARDOUS MATERIALS DEFINITIONS

The following definitions have been abstracted from the Code of Federal Regulations, Title 49, Transportation, Parts 100-177. Refer to the referenced sections for complete details. NOTE: In column (1), Sec. 172.101, Hazardous Materials Table, the plus (+) fixes the proper shipping name and hazard class. The name and class do not change whether the material meets or does not meet the definition of that class. [Sec. 172.101(a)(1)]

HAZARDOUS MATERIAL - A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety and property when transported in commerce, and which has been so designated. (Sec. 171.8)

MULTIPLE HAZARDS - a material meeting the definition of more than one hazard class is classed according to its position in the lists in Sec. 173.2(a) and (b).

DOT HAZARD CLASS	UN CLASS	DEFINITION
		<u>An Explosive</u> - Any chemical compound, mixture, or device-- the primary or common purpose of which is to function by explosion, that is substantially instantaneous release of gas and heat. Exception--such compound, mixture, or device is otherwise specifically classified in Parts 170-189. (Sec. 173.50)
CLASS A EXPLOSIVE	1	Detonating or otherwise of maximum hazard. The nine types of Class A explosives are defined in Sec. 173.53.
CLASS B EXPLOSIVE	1	<u>Flammable hazard</u> - In general, functions by rapid burning rather than detonation. Includes some explosive devices such as special fireworks, flash powders, etc. (Sec. 173.88)
CLASS C EXPLOSIVE	1	<u>Minimum hazard</u> - Certain types of fireworks and certain types of manufactured articles containing restricted quantities of Class A and/or Class B explosives as components. (Sec. 173.100)
BLASTING AGENT		A material designed for blasting which has been tested in accordance with Sec. 173.114a(b). It must be so insensitive that there is very little probability of: (1) accidental explosion <u>or</u> (2) going from burning to detonation. [Sec. 173.114a(b)]
		<u>Compressed Gas</u> - Any material or mixture having in-the-container a pressure EXCEEDING 40 psia at 70° F., OR a pressure exceeding 104 psia at 130° F.; or any liquid flammable material having a vapor pressure exceeding 40 psia at 100° F. [Sec. 173.300(a)]
		<u>Non-liquefied compressed gas</u> is a gas (other than gas in solution) which, under the charged pressure, is entirely gaseous at a temperature of 70° F.
		<u>Liquefied compressed gas</u> is a gas which, under the charged pressure, is partially liquid at a temperature of 70° F.

DOT HAZARD CLASS	UN - CLASS	DEFINITION
		<u>Compressed gas in solution</u> is a compressed gas which is dissolved in a solvent.
FLAMMABLE GAS	2	Any compressed gas meeting criteria as specified in Sec. 173.300(b). This includes: lower flammability limit, flammability limit range, flame projection, or flame propagation.
NONFLAMMABLE GAS	2	Any compressed gas <u>other than</u> a flammable compressed gas.
COMBUSTIBLE LIQUID	3	Any liquid having a flash point <u>at or above</u> 100° F. and below 200° F. Authorized flash point methods are listed in Sec. 173.115(d). Exceptions are found in Sec. 173.115(b).
FLAMMABLE LIQUID	3	Any liquid having a flash point below 100° F. Authorized flash point methods are listed in Sec. 173.115(d). For exceptions, see Sec. 173.115(a). <u>Pyroforic Liquid</u> - Any liquid that ignites spontaneously in dry or moist air <u>at or below</u> 130° F. [Sec. 173.115(c)]
FLAMMABLE SOLID	4	Any solid material (other than an explosive) which is liable to cause fires through friction or retained heat from manufacturing or processing. It can be ignited readily and burns so vigorously and persistently, as to create a serious transportation hazard. Included in this class are spontaneously combustible and water-reactive materials. (Sec. 173.150) <u>Spontaneously Combustible Material (Solid)</u> - A solid substance (including sludges and pastes) which may undergo spontaneous heating or self-burning under normal transportation conditions. These materials may increase in temperature and ignite when exposed to air. (Sec. 173.150) <u>Water Reactive Material (Solid)</u> - Any solid substance (including sludges and pastes) which react with water by igniting or giving off <u>dangerous quantities</u> of flammable or toxic gases. (Sec. 173.150)
ORGANIC PEROXIDE	5	An organic compound containing the bivalent -O-O- structure. It may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals. It must be classed as an organic peroxide unless it meets certain criteria listed in Sec. 173.151(a).
OXIDIZER	5	A substance such as chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily. It accelerates the combustion of organic matter. (See Sec. 173.151)
POISON A	2	<u>Extremely Dangerous Poisons</u> - Poisonous gases or liquids -- <u>a very small amount</u> of the gas, or vapor of the liquid, mixed with air is <u>dangerous to life</u> . (Sec. 173.326)
POISON B	6	<u>Less Dangerous Poisons</u> - Substances, liquids or solids (including pastes and semi-solids), other than Class A or Irritating materials--so toxic (or presumed to be toxic) to man that they are a hazard to health during transportation. (Sec. 173.381)

DOT HAZARD CLASS	UN CLASS	DEFINITION
IRRITATING MATERIAL	6	A liquid or solid substance which, upon contact with fire or air, gives off dangerous or intensely irritating fumes. They do <u>not</u> include any poisonous material, Class A. (Sec. 173.381)
ETIOLOGIC AGENT	6	An "etiologic agent" means a living micro-organism (or its toxin) which causes (or may cause) human disease. (Sec. 173.386)
RADIOACTIVE MATERIAL	7	Any material, or combination of materials, that spontaneously gives off ionizing radiation. It has a specific activity greater than 0.002 microcuries per gram. (Sec. 173.389 [See Sec. 173.389(a) through (l) for details])
CORROSIVE MATERIAL	8	Any liquid or solid that causes visible destruction or irreversible damage to human skin tissue. Also, it may be a liquid that has a severe corrosion rate on steel. [See Sec. 173.240(a) and (b) for details]
ORM - OTHER REGULATED MATERIALS		(1) Any material that may pose an unreasonable risk to health and safety or property when transported in commerce; and (2) does not meet any of the definitions of the other hazard classes specified in this subpart; or (3) has been reclassified an ORM (specifically or permissively) according to this subchapter. [Sec. 173.500(a)]
ORM-A	9	A material which has an anesthetic irritating, noxious, toxic, or other similar property. If the material leaks during transportation passengers and crew would have extreme annoyance and discomfort. [Sec. 173.500(b)(1)]
ORM-B	9	A material (including a solid when wet with water) the leakage of which could cause significant damage to the vehicle transporting it. Materials meeting one or both of the following criteria are ORM-B materials: (1) Specifically designated by name in Sec. 172.101 and/or (2) a liquid substance that has a corrosion rate exceeding 0.250 inch per year (IPY) on non-clad aluminum. An acceptable test is described in NACE Standard TM-01-69. [Sec. 173.500(b)(2)]
ORM-C	9	A material which has other inherent characteristics not described as an ORM-A or ORM-B. It is unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM-C material is specifically named in Sec. 172.101. [Sec. 173.500(b)(3)]
ORM-D	9	A material such as a consumer commodity which presents a limited hazard during transportation due to its form, quantity and packaging. They must be materials for which exceptions are provided in Sec. 172.101. A shipping description applicable to ORM-D material is found in Sec. 172.101. [Sec. 173.500(b)(4)]
ORM-E	9	A material that is not included in any other hazard class, but is subject to the requirements of this subchapter. Materials in this class include (1) HAZARDOUS WASTE and (2) HAZARDOUS SUBSTANCE, as defined in Sec. 171.8 [Sec. 173.500(b)(5)]

THE FOLLOWING ARE OFFERED TO EXPLAIN SOME OF THE ADDITIONAL TERMS USED IN PREPARATION OF HAZARDOUS MATERIALS FOR SHIPMENT. (Sec. 171.8)

DOT TERM	EXPLANATION
CONSUMER COMMODITY (See ORM-D on previous page)	A material that is packaged or distributed in a form intended and suitable for sale through retail sales-type agencies. The material is for use by individuals for personal care or household use. This term also includes drugs and medicines. (Sec. 171.8)
FLASH POINT	The minimum temperature at which the flammable vapors of a substance (in contact with a spark or flame) will ignite. For liquids, see Sec. 173.115.
FORBIDDEN	Material is prohibited from being offered or accepted for transportation. This prohibition <u>does not</u> apply if these materials are diluted, stabilized, or incorporated in devices AND they are classed in accordance with Sec. 172.101(d)(1).
HAZARDOUS SUBSTANCE	For transportation purposes, a material (and its mixtures or solutions) that is identified by the letter "E" in Column (1) of the Hazardous Materials Table, Sec. 172.101. The quantity of the material transported in one package (or in one transport vehicle, if not packaged) must equal or exceed the reportable quantity (RQ).
HAZARDOUS WASTE	Any material that is (1) subject to the hazardous waste manifest requirements of the Environmental Protection Agency specified in the CFR, Title 40, Parts 262; or (2) would-be-subject to these requirements (in the absence of an interim authorization to a State) see Title 40, CFR, Part 123, Subpart F; Sec. 171.8. Questions regarding EPA hazardous waste regulations, call Toll Free (800) 424-9065 or in Washington: 554-1404.
LIMITED QUANTITY	The maximum amount of a hazardous material authorized for specific labeling and packaging exceptions. Consult the sections applicable to the particular hazard class. See Sec. 173.118, 173.118(a), 173.153, 173.244, 173.306, 173.345, 173.364 and 173.391.
REPORTABLE QUANTITY	The quantity of hazardous substance specified in the Hazardous Materials Table (Sec. 172.101). Reportable Quantity is identified by the letter "RQ" in Column (2). (Sec. 171.8)

*THIS HANDOUT IS DESIGNED AS A TRAINING AID FOR ALL INTERESTED PARTIES WHO MAY BECOME INVOLVED WITH HAZARDOUS MATERIALS. IT DOES NOT RELIEVE PERSONS FROM COMPLYING WITH THE DEPARTMENT OF TRANSPORTATION'S HAZARDOUS MATERIALS REGULATIONS. SPECIFIC CRITERIA FOR HAZARD CLASSES AND RELATED DEFINITIONS ARE FOUND IN THE CODE OF FEDERAL REGULATIONS (CFR), TITLE 49, PARTS 100-177.

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US Department
of Transportation
**Research and
Special Programs
Administration**

GUIDE FOR

CHEM OP 30.55 Exhibit 9
9/15/85 9/15/85

HAZARDOUS MATERIALS SHIPPING PAPERS

USE OF GUIDE - This Guide is designed for in-house use when reviewing hazardous materials shipping paper requirements. It does not relieve persons from complying with the Department of Transportation Hazardous Materials Regulations. Final authority for use of shipping papers is found in the Code of Federal Regulations, Title 49, Parts 100-177.

I. DEFINITIONS

- A. SHIPPING PAPER - (Sec. 171.8) A shipping paper may be a shipping order, bill of lading, manifest, or other shipping document serving a similar purpose. It must contain the information required by Sec. 172.202, 172.203 and 172.204.
- B. HAZARDOUS WASTE MANIFEST - (CFR, Title 40, Sec. 262.20) A hazardous waste manifest is a document (shipping paper) on which all hazardous waste is identified. A copy of the manifest must accompany each shipment of waste from the point of pick-up to the destination. (CFR, Title 49, Sec. 172.205).

2. SHIPPERS RESPONSIBILITY - (Sec. 172.200(a)) The shipper, when offering a hazardous material for transport has the responsibility to properly prepare the shipping paper.
NOTE: For shipments of hazardous waste, the hazardous waste manifest is the only authorized documentation. (CFR, Title 40, Sec. 262.23).

3. HAZARDOUS MATERIALS DESCRIPTION - (Sec. 172.202) The shipping description of a hazardous material on a shipping paper must include the following information:

- A. Proper shipping name - MAY NOT BE ABBREVIATED (Sec. 172.101 or Sec. 172.102).
- B. The hazard class of the material; (See exceptions Sec. 172.202(a)(2)).
- C. The identification number for the material (preceded by "UN" or "NA" as appropriate); and
- D. Except for empty packagings, the total quantity (by weight, volume, or as otherwise appropriate) of that hazardous material.
- E. Except as otherwise provided in the regulations, the basic description must be in the sequence shown in Table 172.101. For example "Acetone, Flammable Liquefied, UN1090."
- F. The total quantity of the material covered by one description must appear before or after (or both before and after) the basic description.
- (1) Abbreviations may be used to specify the type of packaging, weight or volume.
Example: "40 Cyl. Nitrogen Nonflammable gas UN 1066, 800 pounds"; "1 box Cement liquid, n.o.s., Flammable liquid, NA1133, 25 lbs."
- (2) Type of packaging and destination marks may be entered in any appropriate manner before or after the basic description.
- G. Technical and chemical group names may be entered in parentheses between the proper shipping name and hazard class. Example: Corrosive liquid, n.o.s. (capryl chloride), corrosive material.

4. GENERAL ENTRIES ON SHIPPING PAPERS - (Sec. 172.201)

- A. CONTENTS When describing a hazardous material on the shipping paper(s), that description must conform to the following requirements:
- (1) When a hazardous material and other materials are both described on the same shipping paper, the hazardous material description entries:
- Must be entered first (See Figure 1), or
 - Must be entered in a contrasting color (or highlighted in a contrasting color) or
 - Must be identified by the entry "X" placed before the proper shipping name in a column captioned "HM". The "X" may be replaced by "RQ" (Reportable Quantity), if appropriate See Figure 1.

BASIC DESCRIPTION

Type of Packagings May Be Abbreviated If Used.

Proper Shipping Name

Hazard Class

Total Quantity

Identification Number

	DESCRIPTION AND CLASSIFICATION	TOTAL QUANTITY	WEIGHT	RATE	CHARGES
10	Drum, Gasoline, Flammable Liquid, UN1203	4500 lbs.			
40	Cyl. Nitrogen, Non-Flammable Gas, UN1066	800 lbs.			
1	Drum, Flammable Solid, n.o.s., UN1325	452 lbs.			
4	Boxes, Advertising Material, Paper, NOI	60 lbs.			
1	Roll, Paper Printing, Newsprint	690 lbs.			
12	Sets, Carbon Paper	22 lbs.			

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CERTIFICATION

HAZARDOUS MATERIALS ENTRIES LISTED FIRST

BASIC DESCRIPTION

Type of Packagings May Be Abbreviated If Used.

Proper Shipping Name

Hazard Class

Total Quantity

Identification Number

	DESCRIPTION AND CLASSIFICATION	TOTAL QUANTITY	WEIGHT	RATE	CHARGES
10	Drums, Gasoline, Flammable Liquid, UN1203	4500 lbs.			
4	Boxes, Advertising Material, Paper, NOI	60 lbs.			
1	Drum, Flammable Solid, N.O.S., UN1325	452 lbs.			
12	Sets, Carbon Paper	22 lbs.			
40	Cyl. Nitrogen, Non-Flammable Gas, UN1066	800 lbs.			

HM Entries-Contrasting Colors

Note: Reproduction of a shipping paper may be highlighted by a highlighting pen rather than printed in a contrasting color.

CERTIFICATION

HAZARDOUS MATERIALS ENTRIES-CONTRASTING COLOR

BASIC DESCRIPTION

Hazardous Materials HM Column

Type of Packagings May Be Abbreviated If Used.

Proper Shipping Name

Hazard Class

Total Quantity

Identification Number

	HM	DESCRIPTION AND CLASSIFICATION	TOTAL QUANTITY	WEIGHT	RATE	CHARGES
4		Boxes, Advertising Materials, Paper, N.O.I.	60 lbs.			
10	X	Drums, Gasoline, Flammable Liquid, UN1203	4500 lbs.			
1	X	Drum, Flammable Solid, n.o.s., UN1325	452 lbs.			
12		Sets, Carbon paper	22 lbs.			
40	X	Cyl. Nitrogen, Nonflammable Gas, UN1066	800 lbs.			
1		Roll, Paper, Printing, Newsprint	690 lbs.			

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CERTIFICATION

HAZARDOUS MATERIALS PREFIXED BY "X" IN HM COLUMN

FIGURE 1. HAZARDOUS MATERIALS LISTED ON SHIPPING PAPERS

- (2) The required shipping description on the original shipping paper and all copies must be legible and printed (manually or mechanically) in English.
- (3) Unless it is specifically authorized or required, the required shipping description may NOT contain any code or abbreviation.
NOTE: UN=United Nations; NA=North American.
- (4) A shipping paper may contain additional information concerning the material provided the information is not inconsistent with the required description. The additional information must be placed after the basic description required by Sec. 172.202(a).
Exceptions:

- a. When appropriate, the entries "IMO" or "IMO Class" may be entered immediately before or immediately following the class entry in the basic description.
- b. If a material meets the definition of more-than-one-hazard-class, the additional hazard class(es) may be entered after the hazard class in the basic description.
NOTE: IMO International Maritime Organization.

B. NAME OF SHIPPER A shipping paper for a shipment by water must contain the name of the shipper.

5. ADDITIONAL DESCRIPTION REQUIREMENTS (Sec. 172.203) (ALL MODES)

- A. Exemptions - Each shipping paper issued in connection with a shipment made under an exemption must bear the notation "DOT-E" followed by the exemption number assigned (Example: DOT-E4648). Place the exemption number adjacent to the description to which the exemption applies.
- B. Limited Quantities - Descriptions for materials defined as "Limited Quantities"...must include the words "Limited Quantities" or "Ltd. Qty." following the basic description.
- C. Hazardous Substances
 - (1) If the proper shipping name (for a mixture or solution that is a hazardous substance) does not identify the constituents making it a hazardous substance, the name or names of such constituents shall be entered in association with the basic description.
 - (2) The letters "RQ" (Reportable Quantity) shall be entered on the shipping paper either before or after the basic description required by Sec. 172.202 for each hazardous substance. (See definition Sec. 171.8) Example: RQ, Cresol, Corrosive Material, NA2076; or Adipic Acid, ORM-E, NA9077, RQ.
- D. Radioactive Materials - For additional description for radioactive materials, refer to Sec. 172.203(d).
- E. Empty Packaging - For an empty packaging that still contains a residue of a hazardous material
 - (1) The description on the shipping paper may include the word(s) "EMPTY" or "EMPTY: Last Contained (Name of Substance with the basic description of that hazardous material).
 - (2) For empty tank cars, see Sec. 174.25(c).
 - (3) If a packaging, including a tank car, contains a residue that is a hazardous SUBSTANCE the description on the shipping paper shall be prefaced with the phrase "EMPTY: Last Contained (Name of Substance)" and shall have "RQ" entered before or after the basic description.
- F. Dangerous When Wet - Packages requiring the label "Dangerous When Wet" shall have the words "Dangerous When Wet" entered on the shipping paper adjacent to the basic description.
- G. Poisonous Materials - Regardless of the class to which a material is assigned:
 - (1) The name of the compound or principal constituent that causes the material to meet the definition of a poison and the proper shipping name shall be entered on the shipping paper adjacent to shipping description for the material.
 - (2) The name of the compound or principal constituent may be either a technical name or any name for the material that is listed in the NIOSH Registry. (Registry of Toxic Effects of Chemical Substances, 1978 Edition) Sec. 172.203(k).
NOTE: For additional details, see Sec. 172.203(k).

H. Exceptions: OTHER REGULATED MATERIAL (ORM - A, B, C, and D)

(1) Shipping paper requirements do not apply to any material other than a hazardous waste or a hazardous substance that is:

- a. An ORM-A, B, or C unless it is offered or intended for transportation by air or water. Then it is subject to the regulations pertaining to transportation by air or water as specified in Sec. 172.101 (Hazardous Materials Table); or
- b. An ORM-D unless it is offered or intended for transportation by air.

MODAL REQUIREMENTS
(ADDITIONAL INFORMATION)

NOTE: In addition to the basic requirements for shipping papers, each mode has specific requirements.

6. TRANSPORTATION BY RAIL

A. SHIPPING PAPERS (Sec. 174.24)

(1) Except as provided in paragraph (b) of 174.24, no person may accept for transportation by rail any regulated hazardous material unless it is accompanied by a shipping paper prepared in a manner specified in Sec. 172.200. In addition, the shipping paper must include a certificate, when required by Sec. 172.204. If the original shipping paper containing the certificate is in the originating carriers possession, no copy of the certificate is required on the train.

(2) This subpart does not apply to materials classed as ORM-A, B, C or D.

B. ADDITIONAL DESCRIPTION FOR SHIPPING PAPERS (Sec. 172.203(g))

(1) The shipping paper for a rail car containing a hazardous material must contain the notation "Placarded" followed by the name of the placard required for the rail car.

(2) The shipping paper for each specification DOT 112A or 114A tank car, (without head shields) containing a flammable compressed gas must contain the appropriate notation "DOT 112A" or "DOT 114A". Also it must contain either "Must be handled in accordance with FRA E.O. NO. 5" or "Shove to rest per E.O. NO. 5." For additional details, refer to Part 174.

7. TRANSPORTATION BY AIR

A. SHIPPING PAPERS ABOARD AIRCRAFT -During transportation aboard an aircraft, the shipment must be accompanied by a copy of the shipping papers required by Sec. 175.30(a)(2).

NOTE: The documents required (shipping papers and notification of pilot-in-command) may be combined into one document-provided it is given to the pilot-in-command before departure of the aircraft. (Sec. 175.35(b)).

B. NOTIFICATION OF PILOT-IN-COMMAND (Sec. 175.33) - Before takeoff the operator of the aircraft shall give the pilot-in-command the following information in writing. (Sec. 175.35):

- (1) Description of hazardous material on shipping papers (Sec. 172.202 and 172.203);
- (2) Location of the hazardous material in the aircraft; and
- (3) The results of the inspection required by Sec. 175.30(b).

NOTE: For additional details, refer to Part 175.

8. TRANSPORTATION BY WATER

A. SHIPPING PAPERS (Sec. 176.24) - A carrier may not transport a hazardous material by vessel unless the material is properly described on the shipping paper. (See Part 172)

B. CERTIFICATE (Sec. 176.27)

(1) A carrier may not transport a hazardous material by vessel unless he has received a certificate prepared in accordance with Sec. 172.204.

- (2) In the case of an import or export shipment of hazardous materials which will NOT be transported by rail, highway, or air, the certification may be listed on the bill of lading or other shipping paper. The shipper must certify that the hazardous materials is properly classed, described, marked, packaged and labeled according to Part 172 OR in accordance with the requirements of the IMO Code. (See Sec. 171.12).
- C. DANGEROUS CARGO MANIFEST - (Sec. 176.30) The master (or his authorized representative) of a vessel transporting hazardous materials shall prepare a dangerous cargo manifest, list, or stowage plan. This document may only include material(s) which are subject to the requirements of CFR, Title 49, or the IMO Code. This document must be kept in a designated holder on or near the vessel's bridge. (See Sec. 176.30 for details)
- D. EXEMPTIONS - (Sec. 176.31) Hazardous material may be transported by vessel under the authority of an exemption. A copy of the exemption MUST to be on board the vessel. It must be kept with the dangerous cargo manifest. (see Part 176)
- E. ADDITIONAL DESCRIPTION FOR SHIPPING PAPERS - (Sec. 172.203(i))
- (1) Each shipment by water must have the following additional shipping paper entries:
- Identification of the type of packages such as barrels, drums, cylinders, and boxes.
 - The number of each type of packages-including those in freight container or on a pallet, and
 - The gross weight of each type of package OR the individual gross weight of each package.
- (2) Shipping papers accompanying "N.O.S." type hazardous materials shipped from USA by vessel to any other country must have:
- For single entry, the technical name in parenthesis after the proper shipping name. Example, Corrosive liquid, n.o.s. (caprylyl chloride), UN1780.
 - For a mixture of two or more hazardous materials - include within the parenthesis the technical names of at least two (2) of the most predominately hazardous components. Example, Flammable liquid, corrosive, n.o.s. (Methyl alcohol, Potassium hydroxide). UN2924.

9. TRANSPORTATION BY HIGHWAY

A. SHIPPING PAPERS - (Sec. 177.817)

- (1) General - A carrier may not transport a hazardous material unless it is accompanied by a shipping paper prepared in accordance with Sec. 172.201, 172.202 and 172.203.
- (2) Shipper's certification - An initial carrier may not accept hazardous materials offered for transportation unless the shipping paper describing the material includes an accurate shipper's certification (Sec. 172.204). Except for a hazardous waste, the certification is not required for shipments transported entirely by private carriage nor bulk shipments transported in a cargo tank supplied by the carrier. (Sec. 177.817(b))
- (3) Changing shipments from highway to rail - When a motor carrier offers or delivers a freight container or transport vehicle to a rail carrier for further transportation, the following must be marked on the shipping paper:
- A description of the freight container or transport vehicle; and
 - The kind of placard affixed to the freight container or transport vehicle.
- (4) Accessibility of shipping papers: Each carrier and driver of the vehicle shall ensure that the shipping paper is readily available for inspection and recognizable by authorities in the case of an accident or for inspection. (See Sec. 177.817(e) for details)

B. ADDITIONAL DESCRIPTION FOR SHIPPING PAPERS - (Sec. 172.203(h)) Additional descriptions for: Anhydrous ammonia see Sec. 172.203(h)(1); Liquefied petroleum gas, see Sec. 172.203(h)(2) and Exemptions see Sec. 172.203(a).

10. SHIPPER'S CERTIFICATION (Sec. 172.204)

A. GENERAL - (Except B and D below)

- (1) Except as provided in paragraphs (b) and (c) of Sec. 172.204, each person who offers a hazardous material for transportation shall certify that the material offered for transportation is in accordance with the regulations. Print (manually or mechanically) the following statement on the shipping paper:

"This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.*"

NOTE: The words "herein-named" may be substituted for the words "above-named".

*NOTE: For hazardous waste shipments, the words "and the EPA" must be added to the end of the certification. (See CFR, Title 40, Sec. 262.21(b))

B. AIR TRANSPORTATION

- (1) General - Certification containing the following language may be used in place of the certification required by paragraph A(1) above:

"I hereby certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and in proper condition for carriage by air according to applicable national governmental regulations."

- (2) Duplicate Certificate - Each person who offers a hazardous material to an aircraft operator for transportation by air shall provide two (2) copies of the certificate. (Sec. 175.30(a)(2))

- (3) Passenger and Cargo Aircraft - If hazardous materials are offered for transportation by air, add to the certificate the following statement:
This shipment is within the limitations prescribed for passenger/cargo-only aircraft. (delete non-applicable)

- (4) Radioactive Material - Each person who offers any radioactive material for transportation aboard a passenger-carrying aircraft shall sign (mechanically or manually) a printed certificate. The certificate must state that the shipment contains radioactive material intended for use in, or incident to, research, medical diagnosis or treatment. (Sec. 172.204(a)(4))

NOTE: See Sec. 175.10 for exceptions.

- C. SIGNATURE - The certifications required above must be legibly signed (mechanically or manually) by a principal, officer, partner or employee of the shipper or his agent. (Sec. 172.204(d))

- D. EXCEPTIONS - Except for a hazardous waste, no certification is required for hazardous material offered for transportation by motor vehicle and transported: (Sec. 172.204(b))

- (1) In a cargo tank supplied by the carrier, or
(2) By the shipper as a private carrier-except for a hazardous material that is to be reshipped or transferred from one carrier to another.
(3) No certification is required for the return of an empty tank car which previously contained a hazardous material and which has not been cleaned or purged.

HAZARDOUS WASTE MANIFEST

The following information has been abstracted from the Code of Federal Regulations (CFR), Title 49, Part. 100-177 and CFR, Title 40, Part 262.

1. DEFINITIONS

- A. HAZARDOUS WASTE MANIFEST (CFR Title 40, Sec. 262.20)

A hazardous waste manifest is a shipping document on which all hazardous wastes are identified.

- B. SHIPPING PAPER - A shipping order, bill of lading, manifest, or other shipping document serving a similar purpose and containing the information required by Sec. 172.202, 172.203 and 172.204.

2. DOT HAZARDOUS MATERIALS MANIFEST REQUIREMENT (Sec. 172.205)

- A. No person may offer, transport, transfer or deliver a hazardous waste unless a hazardous waste manifest is prepared, signed, carried and given as required of that person. (Sec. 172.205(a)).

- B. The shipper (generator) must prepare the manifest in accordance with the EPA Regulations, CFR Title 40, Part 262.

- C. The original copy of the manifest must be dated by, and bear the handwritten signature of the person representing the:
 - (1) Shipper (generator) of waste at the time it is offered for transportation, and
 - (2) Initial carrier accepting the waste for transportation.
- D. A copy of the manifest must be dated by, and bear the handwritten signature of the person representing:
 - (1) Each subsequent carrier accepting the waste for transportation, at the time of acceptance, and
 - (2) Upon receipt, the designated facility receiving the waste.
- E. A copy of the manifest bearing all required dates and signature must be:
 - (1) Given to a person representing each carrier accepting the waste for transportation,
 - (2) Carried during transportation in the same manner as required for shipping papers,
 - (3) Given to a person representing the designated facility receiving the waste,
 - (4) Returned to the shipper (generator) by the carrier that transported the waste from the United States to a foreign destination with a notation of the date of departure from the United States, and
 - (5) Retained by the shipper (generator) and by the initial and each subsequent carrier for three (3) years from the date the waste was accepted by the initial carrier. Each retained copy must bear all required signatures and dates up to and including those entered by the next person who received the waste.
- F. The requirements of Sec. 172.205(d) and E (3) above do not apply to a rail carrier when waste is delivered to a designated facility by railroad if:
 - (1) All of the information required to be entered on the manifest (except generator and carrier identification numbers and the generator's certification⁽¹⁾) is entered on the shipping paper carried in accordance with Sec. 174.26(c);
 - (2) The delivering rail carrier obtains and retains a receipt for the waste that is dated by and bears the handwritten signature of the person representing the designated facility; and
 - (3) A copy of the shipping paper is retained for three (3) years by each railroad transporting the waste.
- G. The person delivering a hazardous waste to an initial rail carrier shall send a copy of the manifest, dated and signed by a representative of the rail carrier, to the person representing the designated facility.
- H. A hazardous waste manifest required by CFR, Title 40, Part 262 containing all the information required by CFR, Title 49, Subpart C shipping papers, may be used as the shipping paper.

3. THE MANIFEST-GENERAL REQUIREMENTS (Sec. 262.20)

- A. A generator (shipper) who transports, or offers for transportation, hazardous waste for off-site treatment, storage, or disposal must prepare a manifest before transporting the waste off-site.
- B. A generator (shipper) must designate on the manifest one facility which is permitted to handle the waste described on the manifest.
- C. A generator (shipper) may also designate on the manifest one alternate facility which is permitted to handle the waste in the event an emergency prevents delivery to the primary designated facility.
- D. If the transporter (carrier) is unable to deliver the waste to the designated facility, the generator must either designate another facility or instruct the transporter to return the waste.

4. MANIFEST INFORMATION (Title 40, CFR, Sec. 262.21)

- A. The manifest must contain:
 - (1) Manifest document number;
 - (2) Generator's (Shipper's) name, mailing address; telephone number, and the EPA identification number;
 - (3) Name and EPA identification number of each transporter (carrier);
 - (4) Name, address and EPA identification number of the designated facility and an alternate facility, if any;
 - (5) Description of the waste(s) (e.g. proper shipping name required by CFR, Title 49, Sec. 172.101, 172.202, and 172.203); and

- (6) Total quantity of each hazardous waste by units of weight or volume, and the type and number of containers loaded into or onto the transport vehicle.
- B. Certification (Title 40 CFR, Sec. 262.21(b)) The following certification must appear on the manifest:
- "This is to certify that the above name materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA".*
5. COPIES OF MANIFEST REQUIRED (Title 40 CFR, Sec. 262.22)
The manifest must consist of at least the number of copies to provide the generator (shipper), each transporter (carrier) and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the owner.
6. USE OF THE MAINFEST (Title 40, CFR, Sec. 262.23)
- A. The generator must:
- (1) Sign the manifest certification by hand;
 - (2) Obtain the handwritten signature of the initial transporter and date of acceptance of manifest; and
 - (3) Retain one copy in accordance with Sec. 262.40(a).
- B. The generator must give the transporter the remaining copies of the manifest.
- C. Shipment of hazardous waste within the United States solely by railroad or water (bulk shipments only); the generator must send three (3) copies of the manifest dated and signed in accordance with Sec. 262.20 to the owner or operator of the designated facility.
- NOTE: Copies of the manifest are not required for each transporter. For special provisions for rail or water (bulk shipment) transporters see Title 40, CFR, Sec. 263.20(e).
7. PREPARATION OF HAZARDOUS WASTE FOR SHIPMENT (Title 40, CFR, Sec 262.30)
- A. Packaging Hazardous Waste - The generator (shipper) has the responsibility for the classification and packaging of hazardous waste prior to offering for transportation.
- NOTE: The requirements for packaging will be found in Title 49, Parts 172, 173, 178 and 179.
- B. Labeling Requirements (Sec. 262.31) - Prior to offering a hazardous waste for transportation off-site, the generator (shipper) must label each package in accordance with CFR Title 49, Part 172, Subpart E.
- C. Marking Requirements (Sec. 262.32) - Prior to offering hazardous waste for transportation off-site, the generator must mark each:
- (1) package of the hazardous waste; and
 - (2) 110 gallons (or less) container offered for transportation with the following words and information: (See CFR 49, Sec. 172.304).
"HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the United States Environmental Protection Agency"
Generator's Name and Address _____
Manifest Document Number _____
- D. Placarding Requirements (Sec. 262.33) - Prior to offering a hazardous waste for transportation off-site, the generator must:
- (1) Placard the shipment; or
 - (2) Offer the initial transporter (carrier) the appropriate placards. (CFR Title 49, Part 172, Subpart F).

NOTE: This material may be reproduced without special permission from this office. Any comments or recommendation should be sent to:

INFORMATION SERVICES DIVISION, DMT-II
OFFICE OF OPERATIONS AND ENFORCEMENT
MATERIALS TRANSPORTATION BUREAU
DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20590

MAY 1984

McK00369

McKesson
Operations

Section	Reference	Page	End
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Subject	Issue Date	Effective Date	
DOT RECORDKEEPING REGULATIONS	9/15/85	9/15/85	

GENERAL

McKesson Chemical Company, as an interstate shipper and a shipper of regulated hazardous chemicals, is closely governed in its activities by the Department of Transportation. This section is concerned with recordkeeping and the maintenance of DOT records.

DOT states that certain records be retained at the "principal place of business" unless written permission is obtained to keep these records at a home office or regional office.

McKesson has applied for and received on behalf of its several companies permission to retain such records at locations other than the Service Centers. Certain records for McKesson Chemical Company are to be retained at the regional office by the Regional Operations Manager. (See DOT approval letter, Exhibit 1.) The balance of DOT required records are to be maintained at the Service Center.

McKesson Operations

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REGIONAL RECORDS

NOTE: Sections are those referred to in DOT approval letter.

A. Sec. 391.51 Driver Qualification Files

§ 391.51 Driver qualification files.

(a) Each motor carrier shall maintain a driver qualification file for each driver it employs. A driver's qualification file may be combined with his personnel file.

(b) The qualification file for a driver who has been a regularly employed driver of the motor carrier for a continuous period which began before January 1, 1971, must include—

(1) The medical examiner's certificate of his physical qualification to drive a motor vehicle or a legible photographic copy of the certificate;

(2) The Director's letter granting a waiver of a physical disqualification, if a waiver was issued under § 391.49;

(3) The note relating to the annual review of his driving record required by § 391.25.

(4) The list or certificate relating to violations of motor vehicle laws and ordinances required by § 391.27; and

(5) Any other matter which relates to the driver's qualifications or ability to drive a motor vehicle safely.

(c) The qualification file for a regularly employed driver who has not been regularly employed by the motor carrier for a continuous period which began before January 1, 1971, must include—

(1) The documents specified in paragraph (b) of this section.

(2) The driver's application for employment completed in accordance with § 391.21;

(3) The responses of State agencies and past employers to the motor carrier's inquiries concerning the driver's driving record and employment pursuant to § 391.23;

(4) The certificate of driver's road test issued to the driver pursuant to § 391.31 (e), or a copy of the license or certificate which the motor carrier accepted as equivalent to the driver's road test pursuant to § 391.33; and

(5) The questions asked, the answers the driver gave, and the certificate of written examination issued to him pursuant to § 391.35, or a copy of a certificate which the motor carrier accepted as equivalent to a written examination pursuant to § 391.37.

(d) The qualification file for an intermittent, casual, or occasional driver employed under the rules in § 391.63 must include—

(1) The medical examiner's certificate of his physical qualification to drive a motor vehicle or a legible photographic copy of the certificate;

(2) The certificate of driver's road test issued to the driver pursuant to § 391.31 (e), or a copy of the license or certificate which the motor carrier accepted as equivalent to the driver's road test pursuant to § 391.31;

(3) The questions asked, the answers the driver gave, and the certificate of written examination issued to him pursuant to § 391.35, or a copy of a certificate which the motor carrier accepted as equivalent to a written examination pursuant to § 391.37; and

(4) The driver's name, his social security number, and the identification number, type, and issuing State of his motor vehicle operator's license.

(e) A using carrier's qualification file for a driver who is regularly employed by another motor carrier, and who is employed by the using carrier in accordance with § 391.65 of this part, shall include a copy of a certificate, as prescribed by § 391.65(a)(2) of this part, by the regularly employing carrier that the driver is fully qualified to drive a motor vehicle.

McKesson

Operations

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REGIONAL RECORDS (Cont.)

B. Sec. 395.8 Driver's Daily Log

§ 395.8 Driver's daily log.

(a) Except as provided in Section 395.9 and in paragraph (t) of this section, every motor carrier shall require that a driver's daily log, Form MCS-59 set forth below, shall be made in duplicate by every driver used by him or it and every driver who operates a motor vehicle shall make such a log. Failure to make logs, failure to make required entries therein, falsification of entries, or failure to preserve logs shall make both the driver and the carrier liable to prosecution. Driver's logs shall be prepared and retained in accordance with the provisions of paragraphs (b) through (s) of this section.

(t) *Exemptions (1) 100-mile-radius drivers.* A driver is exempt from the requirements of this section if—

(i) The driver does not operate beyond the 100-mile radius of the work reporting location more than one time in any 7 consecutive day period;

(ii) The driver, except a driver salesperson, returns to the work reporting location within 12 hours;

(iii) At least 8 consecutive hours off-duty separate each 12 hours on duty; and

(iv) The motor carrier which employs the driver maintains and retains for a period of 1 year accurate and true records showing—

(A) The total number of hours the driver is on duty each day;

(B) The time the driver reports for duty each day;

(C) The time the driver is released from duty each day; and

(D) The total on-duty time for the preceding 7 days in accordance with paragraph (r) of this section for drivers used for the first time or intermittently

SERVICE CENTER RECORDS

C. Sec. 177.824 (also 173.33) Qualification; maintenance and use of cargo tanks. (Original certificates should be retained at the Regional Office, copies retained at Service Center.)

D. Sec. 395.8—Drivers' logs through calendar month. (See retention schedule below.)

E. Sec. 396.3—Inspection, repairs, and maintenance records.

F. Sec. 396.11—Vehicle inspection report by driver.

McKesson
Operations

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SERVICE
CENTER
RECORDS
(Cont.)

G. Sec. 171.16 Detailed Hazardous Materials Incident Reports.

§ 171.16 Detailed hazardous materials incident reports.

(a) Each carrier who transports hazardous materials shall report in writing in duplicate on DOT Form F 5800.1 to the Department within 15 days of the date of discovery, each incident that occurs during the course of transportation (including loading, unloading, or temporary storage) in which, as a direct result of the hazardous materials, any of the circumstances set forth in § 171.15(a) occurs or there has been an unintentional release of hazardous materials from a package (including a tank).

(b) Each carrier making a report under this section shall send that report to the Chief, Information Systems Division, Transportation Programs Bureau, Department of Transportation, Washington, D.C. 20590.

(A copy of DOT Form F5800.1 follows this section as Exhibit 2. Copy Regional and Area Operations Managers.)

Hazardous Materials Incident Report (Form DOT F5800.1) (Exhibit 2)

This report should be completed at the service center and forwarded to Corporate Traffic Department in San Francisco. The report must be filed within 15 days; therefore, if time does not allow sending it to Corporate Traffic for their filing the report within 15 days, it should be filed directly with Agency and address shown above. In this event, forward a copy of the report to Corporate Traffic informing them that the report has been filed directly by the Service Center. Send D. A. Davis, Vice President Operations & Materials Management, Home Office, Regional Office and Area Office a copy of each report.

H. Sec. 173.34 Cylinder test and repair records.

I. Sec. 177.824 (also 173.33) Qualification, maintenance and use of cargo tanks (copies of certificates should be retained at Service Center).

Driver's Equipment Compliance Check (Form MCS 63)

The original copy of this form is given to the driver at the time of a Federal inspection. Driver must turn in

Operations

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SERVICE CENTER RECORDS (Cont.)

form to Service Center Operations Managers/Assistant upon his return to Service Center. The necessary repairs must be made immediately and prior to any further operation of the vehicle. The "Certification of Repairman" on the reverse side of the form must be completed and the original copy forwarded to the Agency as shown thereon. A legible copy of the completed form is to be sent to D. A. Davis, Vice President Operations & Materials Management, Home Office, Region Office, and the Area Office (make copies from the original).

Notice of Apparent Violation (Applicable State Form)

The name of the form may vary by state. Each state has its own form which is used by its State Investigators/Inspectors. As with Federal inspections, a copy is given to the driver and should be returned to the Service Center. Required repairs should be made, and legible copies forwarded to D. A. Davis, Vice President Operations & Materials Management, Home Office, Region Office and the Area Office. If a warning/citation is issued, forward with a cover letter explaining the details and action taken.

All other normal records which might be required, such as shipping papers, bills of lading, tachograph charts, special exemptions, etc.

RETENTION PERIOD

(Refer to Alphabetical Index Above)

- A. Sec. 391.51 - Retain as long as driver is employed, plus 3 years thereafter. Three years after the date of execution, the following may be removed from the driver's qualification files:
1. The medical examiner's certificate.
 2. The note relating to the annual review of his driving record.
 3. The list or certificate relating to violations of motor vehicle laws and ordinances.

McKesson
Operations

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RETENTION
PERIOD
(Cont.)

4. The letter issued granting a waiver of a physical disqualification.
- B. Sec. 395.8 - Driver retains copies of logs in his possession while on duty for 30 days. Logs for each calendar month retained at Service Center until 20th day of succeeding calendar month, then sent to region. Region retains for 6 months from date of receipt.
- C. Sec. 177.824 - Retain for two years after inspection or maintenance. (Visual inspection required every two years following original manufacture date.)
- D. Sec. 395.8 - See "B" above.
- E. Sec. 396.3 - Retain for one year and for six months after vehicle leaves the company control.
- F. Sec. 396.11 - Retain at least three months from the date the report was prepared.
- G. Sec. 171.16 - Retention period not required.
- H. Sec. 173.34 - Records showing the results of reinspection and retest must be kept by the owner or his authorized agent until either expiration of the retest period, or until the cylinder is again reinspected or retested, whichever occurs first.
- I. Sec. 177.824 - See "B" above.



CHEM OP 30.60 Exhibit 1
3/10/86 3/10/86

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ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

Office of Motor Carrier Safety
211 Main Street, Room 1108
San Francisco, California 94105

January 23, 1986

IN REPLY REFER TO

HMC-09

Mr. John Harold
Manager, Procurement & Transportation
McKesson Corporation
One Post Street
San Francisco, CA 94105

RECEIVED
CORPORATE TRANSPORTATION

FEB 12 1986

JOHN R. HAROLD

Dear Mr. Harold:

McKesson Corporation is authorized to maintain Drivers' Qualification Records, and Drivers' Records of Duty Status at the following locations for McKesson Drug & Health Care Group -

Record Retention
Location

Also Records For

2323 N. 27th Avenue
Phoenix, AZ 85009

1401 East 26th Street
Little Rock, AR 72206

14500 East 30th Avenue
Aurora, CO 80011

280 Dividend Road
Rocky Hill, CT 06067

Johnson Drug Co.
5420 West Cypress
Tampa, FL 33623

955 Industrial Court
Norcross, GA 30071

1355 Enterprise Drive
Romeoville, IL 60441

9 Aegean Drive
Methuen, MA 01844

14100 Oakland Avenue
Highland Park, MI 48203

Fort Smith, Arkansas

Billings, Montana
Las Vegas, Nevada
Salt Lake City, Utah

Columbus, Georgia

Cedar Rapids, Iowa
Wichita, Kansas

McK00376

3230 Spruce Street.
St Paul, MN 55117

Milwaukee, Wisconsin

2125 TV Road
Jackson, MS 39204

2825 South 3rd Street
St. Louis, MO 63118

Kansas City, Missouri

100 McKesson Parkway
Cheektowaga, NY 14225

Albany, New York

311 Northland Blvd.
Cincinnati, OH 45246

North Canton, Ohio
Pittsburg, Pennsylvania
Huntington, West Virginia

2120 Commerce Drive
Cayce, SC 29171

1887 Latham Street
Memphis, TN 38106

Louisville, Kentucky

809 110th Street
Arlington, TX 76011

Amarillo, Texas
El Paso, Texas
Houston, Texas

North 2611 Woodruff Road
Spokane, WA 99206

Wilsonville, Oregon

McKesson Wine & Spirits Company

Churchill Distributors
4601 Hollins Ferry Road
Baltimore, MD 21227

McKesson Wine & Spirits Co.
1420 Kleppe Lane
Sparks, NV 89431

In addition to the above authorization you are being authorized to retain manufacturer's certificates and retest reports as required by 49 CFR 177.814 at the following locations for McKesson Chemical Company.

Central Regional Office
600 Hunter Drive
Oak Brook, IL 60521

Eastern Region
Camp Croft Industrial Park
Drawer 2169
Old Union Road
Spartanburg, SC 29302

Western Region
10100 Pioneer Blvd.
Suite 300
Santa Fe Springs, CA 90670

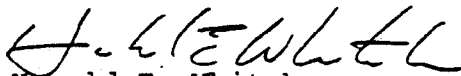
This permission is granted subject to the following conditions:
Maintenance of a current list of all drivers at your principal
office location.

Sufficient records must be on file at the locations specified to
fulfill the requirements of Sections 391.51 and 395.8 of the
Federal Motor Carrier Safety Regulations. Supportive documents
such as payroll, dispatching and driver expense records must be
maintained at those locations to verify the accuracy of drivers'
records of duty status. In addition, you will be required to
establish an internal monitoring system to assure compliance with
these requirements.

Failure to comply with the Federal Motor Carrier Safety
Regulations, the Hazardous Materials Regulations or the
conditions contained herein will result in immediate revocation
of this authority. Such revocation will be in addition to any
other administrative or enforcement actions taken for
noncompliance with applicable regulations.

All Prior approvals are void.

Sincerely yours,



Harold E. Whitaker
Regional Director, Office of
Motor Carrier Safety

cc: HMC-01
HMC-03
HMC-04
HMC-05
HMC-06
HMC-07
HMC-08
HMC-010
HMC-CA

McK00378

GUIDE

for preparing

Hazardous Materials Incident Reports

for preparing

GUIDE

DEPARTMENT OF TRANSPORTATION
Form DOT-113-1 (Rev. 10-84)

HAZARDOUS MATERIALS INCIDENT REPORT

INSTRUCTIONS: Submit this report in duplicate to the Secretary, Hazardous Materials Regulations Board. Report must be submitted by the Department of Transportation, DOT, 4000 (ATTN: DOT). If space provided for use is inadequate, complete the form under "Other" and attach to the report. Copying in the entry number being completed. Copies of this form, in limited quantities, may be obtained from the Secretary, Hazardous Materials Regulations Board. Additional copies in this paragraph if format may be used in the same size and kind of paper.

A. INCIDENT

1. TYPE OF OPERATOR: ☐ DRIVER ☐ OWNER ☐ OTHER (Specify)

2. DATE: TIME: LOCATION:

3. NAME OF INDIVIDUAL:

4. TYPE OF VEHICLE OR:

C. INCIDENT BY ORIGIN

5. NAME AND ADDRESS:

6. SHIPPING:

D. DEATHS, INJURIES, LOSS AND DAMAGE

7. NUMBER PERSONS INJURED:

8. ESTIMATED TOTAL:

E. HAZARDOUS MATERIAL INVOLVED

9. NAME:

10. CLASS:

11. QUANTITY:

F. NATURE OF INCIDENT

11. DROPPED IN HANDLING	12. EXTERNAL LEAKAGE	13. DAMAGE BY OTHER FREIGHT
14. WATER DAMAGE	15. DAMAGE FROM OTHER CAUSE	16. FIRE
17. EXTERNAL HEAT	18. INTERNAL PRESSURE	19. CORROSION OR RUST
20. DEFECTIVE FITTINGS, VALVES OR CLOSURES	21. LOOSE FITTINGS, VALVES OR CLOSURES	22. FAILURE OF INNER RECEPTACLES
23. BOTTOM FAILURE	24. BODY OR SIDE FAILURE	25. WELD FAILURE
26. CRACK FAILURE	27. OTHER CONDITIONS (Specify)	28. SPACE FOR DOT USE ONLY

PREFACE

The Hazardous Material Incident Reporting System was established in 1971 to meet the requirements of the Hazardous Materials Control Act of 1970. This reporting system is required to comply with the Hazardous Materials Transportation Act of 1974 (Title I, Public Law 93-933).

The regulations requiring reporting of hazardous materials incidents are contained in the Code of Federal Regulations, viz:

Title 49, Transportation, Parts 100 to 199 (Governing the transport of hazardous materials by rail, air, water, and highway)

Sec. 171.15 Immediate notice of certain hazardous materials incidents

Sec. 171.16 Detailed hazardous materials incident reports

Sec. 171.17 Hazardous substance discharge notification

NOTE: See Sec. 174.45 (Rail), 175.45 (Air), 176.48 (Water), and 177.807 (Highway)

This reporting system is two-fold in that an immediate telephone notice is required under certain conditions and a detailed written report is required whenever there is any unintentional release of a hazardous material during transportation or temporary storage related to transportation. The same reporting system applies to any quantity of hazardous waste and reportable quantities of hazardous substances discharged during transportation. See 49 CFR 171.15, 171.16, 171.17 for details.

The carrier must submit a report on Form DOT F 5800.1 within 15 days from the date of the incident. While carriers are required to report, any interested party may report. In order to include all pertinent information, other reporting parties are encouraged to also utilize this form. Two copies of the report must be submitted to the Department. NOTE: Typewritten reports are preferred.

The success of this program depends greatly on the quality of the information submitted on the report. Generally, most of this required information is available at the time of the incident, but since leaking and damaged containers are destroyed and spills are cleaned up, some investigation is often necessary in order to obtain all of the facts. Much of this information is also required by carriers for other purposes: insurance records, damage claims, etc. In view of this, carriers may find it to their advantage to incorporate reporting requirements into standard company procedures, thereby making the needed details for the report more readily available and enabling the company to more easily comply with the reporting regulations. PURPOSE: This guide is intended to assist carriers in completing the report form by providing examples of the information needed. However, many reports remain incomplete. Additional information relating to containers, container markings, container specifications, labels, definitions, etc. is available from the Materials Transportation Bureau. Please contact us for assistance.

A limited supply of the report form is available upon request in writing. Larger quantities may be obtained from several industry sources who have reproduced the form for this purpose, or you may reproduce the form yourself. (A blank report form is provided on the last two pages of this guide for this purpose).

Incident reports should now be addressed to: U.S. Department of Transportation Materials Transportation Bureau, ATTN: DMT-412, Washington, D.C. 20590.

INSTRUCTIONS

FILL IN ALL BLANKS. Use N/A when not applicable. If there are none, state "No markings on container," "No label applied," "No symbols," "No serial numbers," etc. as the case may be.

SECTION A: INCIDENT

If item A 1.1 through A 1.5 do not apply, insert at 6 your operational area: Manufacturer, Warehouse, etc. For items A2 and A3, if the actual date and location are not known, give the date and location of discovery. Do not include terms such as "on trailer 376" or "between New York and Philadelphia".

HAZARDOUS MATERIALS INCIDENT REPORT	
<p>INSTRUCTIONS: Submit this report in duplicate to the Director, Office of Program Support, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590, (ATTN: DMT-412). If space provided for any item is inadequate, complete that item under Section H, "Remarks", keying to the entry number being completed. Copies of this form, in limited quantities, may be obtained from the Director, Office of Program Support. Additional copies in this prescribed format may be reproduced and used, if on the same size and kind of paper.</p>	
<p>A INCIDENT</p>	
<p>1. TYPE OF OPERATION 1 <input type="checkbox"/> AIR 2 <input checked="" type="checkbox"/> HIGHWAY 3 <input type="checkbox"/> RAIL 4 <input type="checkbox"/> WATER 5 <input type="checkbox"/> FREIGHT FORWARDER 6 <input type="checkbox"/> OTHER _____ (Identify)</p>	
<p>2. DATE AND TIME OF INCIDENT (Month - Day - Year)</p> <p>March 7, 1972</p> <p>11:30 a.m. p.m.</p>	<p>3. LOCATION OF INCIDENT</p> <p>Exit 3 on I-495 near Alexandria, Va.</p>

SECTION 8: REPORTING CARRIER, COMPANY OR INDIVIDUAL

Item B4 should indicate the complete company name. Do not use abbreviations. If the report is submitted by someone other than the carrier involved in the incident, please indicate your connection with the incident such as "J & J Chemicals--Consignee" and identify the carrier. Item B5 should be the main office address of the company, not the terminal preparing the report. Item B6 should specify the type of vehicle or facility in which the unintentional release took place: tank car, van trailer, trailer on flat car (TOFC), storage warehouse, etc.

storage warehouse, etc.	
B REPORTING CARRIER, COMPANY OR INDIVIDUAL 4. FULL NAME ABC Trucking Company, Inc.	5. ADDRESS (Number, Street, City, State and Zip Code) 204 Post Avenue Fayetteville, North Carolina 28301
6. TYPE OF VEHICLE OR FACILITY Tractor - Van Trailer	

SECTION C: SHIPMENT INFORMATION

Items C7 and C8 should include the complete company name, "Scientific Div. - AHS" does not, by itself, identify the shipper or consignee although it may be completely obvious to the reporter as "American Hotel Supply". The street address and zip code should also be included. Item C9 should clearly identify the shipping papers. A series of numbers without any identification is not very meaningful. An example of "Other" in item C10 would be the broker or agent of the shipper on an import shipment.

<p>in item C10 would be the broker or agent of the shipper. On an invoice, the shipper's name and address should be given in item C10.</p>	
<p>C SHIPMENT INFORMATION</p>	
<p>7. NAME AND ADDRESS OF SHIPPER (Origin address)</p> <p>XYZ Chemical Company 1101 South Peachtree Street Atlanta, Ga. 30303</p>	<p>8. NAME AND ADDRESS OF CONSIGNEE (Destination address)</p> <p>J & J Chemicals 1506 Wayne Street Alexandria, Va. 22301</p>
<p>9. SHIPPING PAPER IDENTIFICATION NO.</p> <p>Shipper's B/L: FNC 12345</p> <p>Carrier's Pro: 98765</p>	<p>10. SHIPPING PAPERS ISSUED BY</p> <p><input checked="" type="checkbox"/> CARRIER <input type="checkbox"/> SHIPPER</p> <p><input type="checkbox"/> OTHER (Identify) _____</p>

MKIL40531

MK094941

MKIL189532

McK00381

SECTION D: DEATHS, INJURIES, LOSS AND DAMAGE

For items D11 and D12 enter the number of persons injured or killed AS A RESULT OF THE HAZARDOUS MATERIALS INVOLVED. If a casualty resulted from a collision and not from the release of a hazardous material, then "none" should be entered. If the exact amounts for items D13 and D14 are not known, give an estimate. Do not leave these spaces blank.

D DEATHS, INJURIES, LOSS AND DAMAGE		
DUE TO HAZARDOUS MATERIALS INVOLVED		13. ESTIMATED AMOUNT OF LOSS AND OR PROPERTY DAMAGE INCLUDING COST OF DECONTAMINATION (Round off in dollars)
11. NUMBER PERSONS INJURED -1-	12. NUMBER PERSONS KILLED -0-	
14. ESTIMATED TOTAL QUANTITY OF HAZARDOUS MATERIALS RELEASED 45 gals.		
		\$1,000.00

SECTION E: HAZARDOUS MATERIALS INVOLVED

In item E15 enter the hazard class of the commodity as shown in the hazardous materials table. The shipping name in E16 MUST be one of the names shown in the commodity list of the hazardous materials regulations mentioned in the PREFACE. This may or may not be the same name used for rate or billing purposes. Nevertheless, the regulations are quite specific as to a commodity's proper hazardous material shipping name. In item E17 enter the trade name if any.

E HAZARDOUS MATERIALS INVOLVED		
15. HAZARD CLASS (*Sec. 172.101, Col. 3)	16. SHIPPING NAME (*Sec. 172.101, Col. 2)	17. TRADE NAME
Flammable liquid	Waste Acetone	None

SECTION F: NATURE OF PACKAGING FAILURE

In item F18 check all spaces which may have contributed to the package failure. An "External Puncture" may have been caused by "Other Conditions" such as a traffic collision. Do not make any mark in item 19.

F NATURE OF PACKAGING FAILURE		
18. (Check all applicable boxes)		
(1) DROPPED IN HANDLING	(2) EXTERNAL PUNCTURE	(3) DAMAGE BY OTHER FREIGHT
(4) WATER DAMAGE	(5) DAMAGE FROM OTHER LIQUID	(6) FREEZING
(7) EXTERNAL HEAT	(8) INTERNAL PRESSURE	(9) CORROSION OR RUST
(10) DEFECTIVE FITTINGS, VALVES, OR CLOSURES	(11) LOOSE FITTINGS, VALVES OR CLOSURES	(12) FAILURE OF INNER RECEPTACLES
(13) BOTTOM FAILURE	(14) BODY OR SIDE FAILURE	(15) WELD FAILURE
(16) CHIME FAILURE	(17) OTHER CONDITIONS (Identify) X Traffic Collision	19. SPACE FOR DOT USE ONLY

Form DOT F 5800.1 (10-70) (9/1/76)

*-Editorial change to incorporate redesignation per HM-112.

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McK00382

SECTION G: PACKAGING INFORMATION

Columns #1, #2, and #3 may be used to convey a variety of information. You may report details of three different types of containers from which hazardous materials escaped, or three containers of the same type but of different capacities, or three containers of the same type and size but made by three different container manufacturers. In the example below, Columns #1 and #2 have been used to separate the details of inner and outer containers. If Columns #1, #2, and #3 are not adequate, a separate sheet may be attached to the report, or you may utilize the space in the "Remarks".

Additional examples for G20 are "Carboys" and "Fiberboard Box" and for G21, the capacity of a tank trailer or tank car. G22 and G23--In the example below, the report clearly indicates that hazardous materials escaped from 1 drum and 1 liner out of 72 lined drums in the shipment. When the inner and outer containers are of a different capacity or nomenclature, the report should clearly state. For example: 2 glass bottles out of 4 glass bottles in a carton were broken. If there were 10 such cartons in the shipment, then the report should state that hazardous materials escaped from 2 bottles out of 40 bottles in the shipment and from 1 carton out of 10 cartons. There should be no doubt that the 40 bottles were the inner containers of 10 outer containers in one shipment.

In G24 show all of the markings related to the container. "12B" is not the complete marking for a fiberboard box. It should be "12B40", or "12B60", etc. If the container bears no DOT specification marking, enter "NONE" in the space. DO NOT leave G24 blank.

G25 - The hazardous materials regulations also require additional markings in some cases, such as: "HIGH EXPLOSIVES - DANGEROUS" or "HANDLE CAREFULLY".

G26 - Enter the name of the container manufacturer. Keep in mind that some manufacturers use initials, abbreviations, symbols and combinations of letters and symbols.

G27 - Enter the serial number of a cylinder, cargo tank, tank car or portable tank. The serial number of a cylinder appears just below the cylinder neck. A tank car serial number might be similar to "GUTX 98765".

G28 - Enter "Flammable Liquid", "Compressed Gas", etc. If no label appears on the package, state "NONE".

G29A - Include symbols and registration numbers e.g. R 1000, M 1000, etc.

G29B - Show periodic test dates for containers which require same (e.g. cylinders, tank vehicles, reconditioned drums).

G30 - Include DOT Exemption Numbers (e.g. DOT E 9999).

G PACKAGING INFORMATION - If more than one size or type packaging is involved in loss of material show packaging information separately for each. If more space is needed, use Section H "Remarks" below keying to the item number.				
ITEM		#1	#2	#3
20	TYPE OF PACKAGING INCLUDING INNER RECEPTACLES (Steel drums, wooden box, cylinder, etc.)	(Inner) Plastic Liner	(Outer) Steel Drum	
21	CAPACITY OR WEIGHT PER UNIT (55 gallons, 65 lbs., etc.)	55 gals.	55 gals.	
22	NUMBER OF PACKAGES FROM WHICH MATERIAL ESCAPED	1	1	
23	NUMBER OF PACKAGES OF SAME TYPE IN SHIPMENT	72	72	
24	DOT SPECIFICATION NUMBER(S) ON PACKAGES (21P, 17E, JAA, etc., or none)	DOT 2SL	DOT 17H	
25	SHOW ALL OTHER DOT PACKAGING MARKINGS (Part 178)	55-12-71	STC 18/16-55-70	
26	NAME, SYMBOL, OR REGISTRATION NUMBER OF PACKAGING MANUFACTURER	AAA	FUBAR	
27	SHOW SERIAL NUMBER OF CYLINDERS, CARGO TANKS, TANK CARS, PORTABLE TANKS	N/A	N/A	
28	TYPE DOT LABEL(S) APPLIED	N/A	Corrosive Liquid	
29	IF RECONDITIONED OR REQUALIFIED, SHOW	REGISTRATION NO. OR SYMBOL N/A	DOT R1000	
		DATE OF LAST TEST OF INSPECTION N/A	Tested 2/72	
30	IF SHIPMENT IS UNDER DOT OR USCG SPECIAL PERMIT OR EXEMPTION, ENTER PERMIT OR EXEMPTION NO.	None	None	

MKIL40533

SECTION H: REMARKS

In addition to the information requested following "Remarks" on the form, this section should be used to include any information which the reporter feels is pertinent. For instance, if there was a spill of a flammable liquid and the driver was burned, and you did not indicate "fire" in F17 (Other Conditions), then Section H should clearly explain that there was a fire involving the flammable cargo, the origin of the fire, etc. In instances of contamination of a vehicle or freight, the method of decontamination and disposition of the contaminated freight should be explained. Estimate the quantity of hazardous waste removed from the scene, the name and address of the facility to which it was taken and the manner of disposition of any unremoved waste. Estimate the quantity of hazardous substance removed from the scene and the manner of disposition of any unremoved hazardous substance. (See Sec. 171.16 (a)(1) and (2))

H REMARKS - Describe essential facts of incident including but not limited to defects, damage, probable cause, stowage, action taken at the time discovered, and action taken to prevent future incidents. Include any recommendations to improve packaging, handling, or transportation of hazardous materials. Photographs and diagrams should be submitted when necessary for clarification.

EXAMPLES OF:

- HAZARDOUS MATERIAL - Our vehicle was involved in a minor traffic accident which caused the load to shift and puncture one of the drums. The leaking drum was removed by the consignee to their disposal area and buried. The vehicle was taken to our Alexandria terminal and cleaned (washed down and steamed). A Highway Patrolman on the scene had some of the spilled liquid splash on his hand. He was taken to a local hospital where he was treated and released.
- HAZARDOUS WASTE - Five hundred gallons of waste acetone were removed from the ruptured cargo tank and sent to our Brooklyn terminal at 1005 Flatbush Ave., N.Y., N.Y. for disposition. All waste acetone was removed from the scene.
- HAZARDOUS SUBSTANCE - One thousand five hundred pounds (681 kilograms) of styrene monomer, inhibited were removed from the ruptured tank car and pumped into another tank car. The hazardous substance was sent to out disposal site in Jersey City, N.J. All spilled styrene monomer was cleaned up and removed for disposal.

31. NAME OF PERSON PREPARING REPORT (Type or print) Ira Jeopard	32. SIGNATURE
33. TELEPHONE NO. (Include Area Code) (202) 143-0510	34. DATE REPORT PREPARED June 15, 1980

NOTE: This report cancels the report formerly required by Section 177.814. It DOES NOT REPLACE other required reports such as the accident report MCS-50 required by the Federal Highway Administration. This material may be reproduced without special permission from this office.

MKIL40534

MK094944

DEPARTMENT OF TRANSPORTATION

Form Approved OMB No. 04-5613

HAZARDOUS MATERIALS INCIDENT REPORT

INSTRUCTIONS: Submit this report in duplicate to the Director, Office of Program Support, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590, (ATTN: DMT-412). If space provided for any item is inadequate, complete that item under Section H, "Remarks", keying to the entry number being completed. Copies of this form, in limited quantities, may be obtained from the Director, Office of Program Support. Additional copies in this prescribed format may be reproduced and used, if on the same size and kind of paper.

A INCIDENT			
1. TYPE OF OPERATION 1 <input type="checkbox"/> AIR 2 <input type="checkbox"/> HIGHWAY 3 <input type="checkbox"/> RAIL 4 <input type="checkbox"/> WATER 5 <input type="checkbox"/> FREIGHT FORWARDER 6 <input type="checkbox"/> OTHER (Identify) _____			
2. DATE AND TIME OF INCIDENT (Month - Day - Year) _____. _____. _____. _____ a.m. _____ p.m.		3. LOCATION OF INCIDENT	
B REPORTING CARRIER, COMPANY OR INDIVIDUAL			
4. FULL NAME		5. ADDRESS (Number, Street, City, State and Zip Code)	
6. TYPE OF VEHICLE OR FACILITY			
C SHIPMENT INFORMATION			
7. NAME AND ADDRESS OF SHIPPER (Origin address)		8. NAME AND ADDRESS OF CONSIGNEE (Destination address)	
9. SHIPPING PAPER IDENTIFICATION NO.		10. SHIPPING PAPERS ISSUED BY <input type="checkbox"/> CARRIER <input type="checkbox"/> SHIPPER <input type="checkbox"/> OTHER (Identify) _____	
D DEATHS, INJURIES, LOSS AND DAMAGE			
DUE TO HAZARDOUS MATERIALS INVOLVED			13. ESTIMATED AMOUNT OF LOSS AND/OR PROPERTY DAMAGE INCLUDING COST OF DECONTAMINATION (Round off in dollars) \$
11. NUMBER PERSONS INJURED		12. NUMBER PERSONS KILLED	
14. ESTIMATED TOTAL QUANTITY OF HAZARDOUS MATERIALS RELEASED			
E HAZARDOUS MATERIALS INVOLVED			
15. HAZARD CLASS (*Sec. 172.101, Col. 3)		16. SHIPPING NAME (*Sec. 172.101, Col. 2)	17. TRADE NAME
F NATURE OF PACKAGING FAILURE			
18. (Check all applicable boxes)			
(1) DROPPED IN HANDLING	(2) EXTERNAL PUNCTURE	(3) DAMAGE BY OTHER FREIGHT	
(4) WATER DAMAGE	(5) DAMAGE FROM OTHER LIQUID	(6) FREEZING	
(7) EXTERNAL HEAT	(8) INTERNAL PRESSURE	(9) CORROSION OR RUST	
(10) DEFECTIVE FITTINGS, VALVES, OR CLOSURES	(11) LOOSE FITTINGS, VALVES OR CLOSURES	(12) FAILURE OF INNER RECEPTACLES	
(13) BOTTOM FAILURE	(14) BODY OR SIDE FAILURE	(15) WELD FAILURE	
(16) CHIME FAILURE	(17) OTHER CONDITIONS (Identify)	19. SPACE FOR DOT USE ONLY	

Form DOT F 5800.1 (10-70) (9/1/76)

*Editorial change to incorporate redesignation per HM-112.

MK094945

MKIL40535

MKIL189536

McK00385

G. PACKAGING INFORMATION - If more than one size or type packaging is involved in loss of material show packaging information separately for each. If more space is needed, use Section H "Remarks" below keying to the item number.				
ITEM		#1	#2	#3
20	TYPE OF PACKAGING INCLUDING INNER RECEPTACLES (Steel drums, wooden box, cylinder, etc.)			
21	CAPACITY OR WEIGHT PER UNIT (55 gallons, 65 lbs., etc.)			
22	NUMBER OF PACKAGES FROM WHICH MATERIAL ESCAPED			
23	NUMBER OF PACKAGES OF SAME TYPE IN SHIPMENT			
24	DOT SPECIFICATION NUMBER(S) ON PACKAGES (21P, 17E, 3AA, etc., or none)			
25	SHOW ALL OTHER DOT PACKAGING MARKINGS (Part 178)			
26	NAME, SYMBOL, OR REGISTRATION NUMBER OF PACKAGING MANUFACTURER			
27	SHOW SERIAL NUMBER OF CYLINDERS, CARGO TANKS, TANK CARS, PORTABLE TANKS			
28	TYPE DOT LABEL(S) APPLIED			
29	IF RECONDITIONED OR REQUALIFIED, SHOW	A	REGISTRATION NO. OR SYMBOL	
		B	DATE OF LAST TEST OF INSPECTION	
30	IF SHIPMENT IS UNDER DOT OR USCG SPECIAL PERMIT, ENTER PERMIT NO.			
H. REMARKS - Describe essential facts of incident including but not limited to defects, damage, probable cause, stowage, action taken at the time discovered, and action taken to prevent future incidents. Include any recommendations to improve packaging, handling, or transportation of hazardous materials. Photographs and diagrams should be submitted when necessary for clarification.				
31. NAME OF PERSON PREPARING REPORT (Type or print)		32. SIGNATURE		
33. TELEPHONE NO. (Include Area Code)		34. DATE REPORT PREPARED		

MKIL40536

Reverse of Form DOT F 5800.1 (10-70)

MK094946

MKIL189537
McK00386

M-Kesson Operations

Section	Reference	Page	End
TRANSPORTATION	30.61	1	X
Subject	Issue Date	Effective Date	
DOT MOTOR CARRIER ACCIDENT REPORTING	6/30/86	6/30/86	

REPORTING OF ACCIDENTS

In connection with the memorandum reproduced below, a copy of DOT Form MCS 50-T referred to therein and guide for preparing same follow this subject as Exhibits 1 and 2. Note that the property damage threshold on reportable accidents has risen from \$2,000 to \$4,000.

To Stu Braznell
Bob Castello
Dick Davis
Charles Garcia
Joe Goldblum
Doug Johnston
Joe Murphy
Don Wakefield

Date April 17, 1986

From John Harold

Location/Tel. 8/8560

Subject Accidental Reporting
Department of Transportation

Copies To D. Thompson
A. Weiner
A. Pearce
B. Arms

M-Kesson
Intra Company
Correspondence

In order to cut paperwork by reducing the number of accidents reported, DOT has raised the property damage threshold on reportable accidents from \$2,000 to \$4,200.

Additionally, rules for reporting accidents involving bodily injury have been modified so that injury accidents are reportable only when a person immediately receives medical treatment away from the scene of the accident (at a hospital, for example). This change was made to reduce the confusion arising when an injured person requires medical treatment some time after an accident occurs and to eliminate reporting of accidents where injuries are not serious enough to warrant immediate treatment away from the scene.

The MCS-50T accident report form remains unchanged, and DOT says that, even though the last revision was in 1973, their Guide for Preparing Carrier Accident Reports will probably not be reprinted to reflect these new rules due to budget cuts.

A copy of the federal register detailing these changes is attached for your information.

JRH/dt

Att.

P.S. Those of you who have responsibility for multiple units should make sure they are advised of this reporting change. Also, those of you who have Operations Manuals which include D.O.T. reporting requirements should update them to reflect this change.

MKIL40537

MK094947

MKIL189538
McK00387

6/30/86

6/30/86

Page 1 of 2

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF MOTOR CARRIER SAFETY

MOTOR CARRIER ACCIDENT REPORT

Original and two copies of MCS 50-T shall be filed with the Director, Regional Motor Carrier Safety Office, FHWA, as required by 394.9. Copy shall be retained in carrier's file. Circle or (X) appropriate boxes below.

1. Name of carrier (Corporate business name) (7-21)				2. Principal Address (Street and no., City, State, ZIP Code.) (22-50)			
3. Type of carrier <input checked="" type="checkbox"/> Private, Employer ID No. (IRS) _____ <input type="checkbox"/> ICC authorized, MC _____ <input type="checkbox"/> Other (Specify) _____ (51-66)				Employer ID No. (IRS) _____			
4. Type of trip <input checked="" type="checkbox"/> Over-the-road <input type="checkbox"/> Local pick-up and delivery operation (67)							
5. Place accident occurred (Nearest Town or City, State) (68-78)				5A. Type of district (79) <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Rural <input type="checkbox"/> Primarily business			
6. Street or highway (Route or Name) (7-16)				6A. Location if off highway (17-26)			
7. Day of week <input checked="" type="checkbox"/> M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> TH <input type="checkbox"/> F <input type="checkbox"/> S <input type="checkbox"/> S (27)		8. Date accident occurred (28-33) _____/_____/_____		9. Time accident occurred (Military time to nearest hour) (34-35)			
10. ACCIDENT TYPE (Primary Event)							
10A. Collision (Check appropriate box) (36) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Collision with moving object <input type="checkbox"/> Collision with fixed or parked object							
10B. Collision (Check other object involved) (37-45) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Pedestrian <input type="checkbox"/> Animal <input type="checkbox"/> Commercial truck <input type="checkbox"/> Bus <input type="checkbox"/> Motorcycle <input type="checkbox"/> Fixed object <input type="checkbox"/> Train <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Automobile <input type="checkbox"/> Bicyclist							
10C. Collision with another vehicle—Accident Classification (Check appropriate box) zzz <input type="checkbox"/> not applicable							
(46-48) VEHICLES				(46-48) VEHICLES			
	1	2	3		1	2	3
A			Slowing—Stopping	L			Intersection
B			Stopped	M			Passing
C			Parked	N			Changing Lanes
D			Rear-end	O			Sideswipe—Opposite Direction
E			Backing	P			Head-On—Crossed Into Opposing Lane
F			Making Right Turn	Q			Skidding
G			Making Left Turn	R			Vehicle Out-Of-Control
H			Making U-Turn	S			Roll-Away
I			Proceeding Straight	T			Controlled Railroad Crossing
J			Merging	U			Uncontrolled Railroad Crossing
K			Entering Traffic From Shoulder, Median, Parking Strip or Private Drive	V			Other (Specify) _____
10D. Non-collision (Check primary event) (49-57) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Ran off road <input type="checkbox"/> Jackknife <input type="checkbox"/> Overturn <input type="checkbox"/> Separation of units <input type="checkbox"/> Fire <input type="checkbox"/> Loss or spillage of cargo <input type="checkbox"/> Cargo shift <input type="checkbox"/> Other (Specify) _____							
10E. If not primary event, did accident result in (58) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Spillage of hazardous cargo <input type="checkbox"/> Fire <input type="checkbox"/> Spillage of non-hazardous cargo <input type="checkbox"/> Explosion							
11. DRIVER INFORMATION							
11A. Name of your driver (59-72)				11B. Age (73-74)		11C. Social Security No. (7-15) _____/_____/_____	
11D. How long employed as your driver (To nearest year) (16-17)							
11E. Hours actually driving since last period of 8 consecutive hours off duty (18) <input checked="" type="checkbox"/> 1 hr. <input type="checkbox"/> 3 hrs. <input type="checkbox"/> 5 hrs. <input type="checkbox"/> 7 hrs. <input type="checkbox"/> 9 hrs. <input checked="" type="checkbox"/> 11-12 hrs. <input type="checkbox"/> 2 hrs. <input type="checkbox"/> 4 hrs. <input type="checkbox"/> 6 hrs. <input type="checkbox"/> 8 hrs. <input type="checkbox"/> 10 hrs. <input type="checkbox"/> Not applicable							
11F. Estimated hours of driving for entire trip or portion of trip, since last period of 8 consecutive hours off duty (19) <input checked="" type="checkbox"/> 1 hr. <input type="checkbox"/> 3 hrs. <input type="checkbox"/> 5 hrs. <input type="checkbox"/> 7 hrs. <input type="checkbox"/> 9 hrs. <input checked="" type="checkbox"/> 11-12 hrs. <input type="checkbox"/> 2 hrs. <input type="checkbox"/> 4 hrs. <input type="checkbox"/> 6 hrs. <input type="checkbox"/> 8 hrs. <input type="checkbox"/> 10 hrs. <input type="checkbox"/> Not applicable							
11G. Condition of driver (20-28) <input checked="" type="checkbox"/> Apparently normal <input type="checkbox"/> Had been drinking <input type="checkbox"/> Medical waiver <input type="checkbox"/> Sick <input type="checkbox"/> Dozed at wheel <input type="checkbox"/> Other (Specify) _____							
11H. Date of last medical certificate (29-34) _____/_____/_____							

MKIL40538

Form MCS 50-T (Property-Carrying) (Rev. 8-72) Previous editions of this form are obsolete (over)

MK094948

MKIL189539

McK00388

CHEM OP. 30.61 Exhibit 1
6/30/86 6/30/86
Page 2 of 2

12. CARRIER'S VEHICLE(S)						TYPE OF BODY (70-74)				
Type (35-39)	Year (40-41)	No. of Axles (42-43)	Make (44-53)	Model No. (54-63)	Company No. (64-69)	Van	Flat	Tank	Auto Carrier	Other (Specify)
<input type="checkbox"/> A Truck										
<input type="checkbox"/> B Tractor										
<input type="checkbox"/> C Semi-trailer										
<input type="checkbox"/> D Full trailer										
<input type="checkbox"/> E Full trailer (2nd)										
<input type="checkbox"/> F Other (Specify) _____										
13. Total length of vehicle/comb. (7-9) Ft.		13A. Total width of vehicle or cargo (10-11) Ft.		13B. Weight (cargo) (12-17) Lbs.		13C. Weight (gross) (18-23) Lbs.				
14. Type of fuel <input type="checkbox"/> A Gasoline <input type="checkbox"/> B Diesel <input type="checkbox"/> C L.P.G. <input type="checkbox"/> D Other (Specify) _____ (24-29)										
15. Cargo at time of accident (Your vehicle) <input type="checkbox"/> A Hazardous materials in cargo (Specify classification) _____ <input type="checkbox"/> B Non-hazardous materials in cargo										
16. Check one of the following as principal type of cargo <input type="checkbox"/> A General freight <input type="checkbox"/> F Motor vehicles <input type="checkbox"/> I Liquids in bulk <input type="checkbox"/> N Mobile home (39-44) <input type="checkbox"/> B Household goods or uncrated furniture/fixtures <input type="checkbox"/> G Driveway-towaway <input type="checkbox"/> J Explosives <input type="checkbox"/> O Farm products <input type="checkbox"/> C Metal: Coils, sheets, rods, plates, etc. <input type="checkbox"/> H Gases in bulk <input type="checkbox"/> K Logs, poles, lumber <input type="checkbox"/> P Other (Specify) _____ <input type="checkbox"/> D Heavy machinery or other large objects <input type="checkbox"/> L Solids in bulk <input type="checkbox"/> M Empty <input type="checkbox"/> R Refrigerated foods										
17. Was your driver killed? (45) <input type="checkbox"/> A Yes <input type="checkbox"/> B No		17A. Was driver injured? (46) <input type="checkbox"/> A Yes <input type="checkbox"/> B No		17B. Was your relief driver killed? (47) <input type="checkbox"/> A Yes <input type="checkbox"/> B No <input type="checkbox"/> C N/A		17C. Was relief driver injured? (48) <input type="checkbox"/> A Yes <input type="checkbox"/> B No <input type="checkbox"/> C N/A				
18. Number of other authorized persons in your vehicle Killed _____ Injured _____ (49-50)		18A. Number of unauthorized persons in your vehicle Killed _____ Injured _____ (51-52)								
19. Total number of other persons killed _____ injured _____ (53-56) 19A. Amount of total property damage in dollars \$ _____ (57-61)										
20. Were mechanical defects or failures apparent on your vehicle at time of accident? <input type="checkbox"/> A Yes <input type="checkbox"/> B No (62)										
21. Check appropriate boxes (Mechanical defects or failures) (63-69) <input type="checkbox"/> A Not applicable <input type="checkbox"/> D Steering system <input type="checkbox"/> G Driveline <input type="checkbox"/> J Lights <input type="checkbox"/> B Fuel system <input type="checkbox"/> E Suspension <input type="checkbox"/> H Engine <input type="checkbox"/> K Coupling <input type="checkbox"/> C Wheels and tires <input type="checkbox"/> F Transmission <input type="checkbox"/> I Brakes <input type="checkbox"/> L Other (Specify) _____										
22. Was your vehicle equipped with seat belts? <input type="checkbox"/> A Yes <input type="checkbox"/> B No (70)										
23. Were seat belts in use by your driver(s) at time of accident? <input type="checkbox"/> A Yes <input type="checkbox"/> B No (71)										
24. OTHER VEHICLES INVOLVED										
24A. Company name or operator (Vehicle #2)				24B. Address				24C. Type of vehicle		
24D. Company name or operator (Vehicle #3)				24E. Address				24F. Type of vehicle		
25. Weather (7-12) <input type="checkbox"/> A Rain <input type="checkbox"/> C Snow <input type="checkbox"/> E Cloudy/overcast <input type="checkbox"/> B Clear <input type="checkbox"/> D Fog/Smog <input type="checkbox"/> F Sleet <input type="checkbox"/> G Other (Specify) _____						25A. Light (13-18) <input type="checkbox"/> A Day <input type="checkbox"/> C Dawn <input type="checkbox"/> E Dusk <input type="checkbox"/> F Dark <input type="checkbox"/> B Artificial lights <input type="checkbox"/> D Other (Specify) _____				
26. Road surface (19-23) <input type="checkbox"/> A Dry <input type="checkbox"/> C Snowy <input type="checkbox"/> E Other <input type="checkbox"/> B Wet <input type="checkbox"/> D Icy (Specify) _____			26A. Total number of lanes (24) <input type="checkbox"/> A One lane <input type="checkbox"/> C Three lanes <input type="checkbox"/> B Two lanes <input type="checkbox"/> D Four or more lanes			26B. Type of highway (25) <input type="checkbox"/> A Divided <input type="checkbox"/> B Undivided				
26C. Check appropriate box <input type="checkbox"/> A Entrance ramp (Expressway) <input type="checkbox"/> B Exit ramp (Expressway) <input type="checkbox"/> C Not applicable (26)										
27. Account of accident by carrier official										
MKIL40539										
28. Name and title of person signing report						29. Signature				
30. Telephone Number Area Code						31. Date report submitted (27-32)				

Form MCS 50-T (8-72)

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
Price \$2.75 per set Stock No. 280-004-00007-4 Catalog Number TD 2 Form MCS-50-T 972

GPO 1975 O-593-536

MK094949

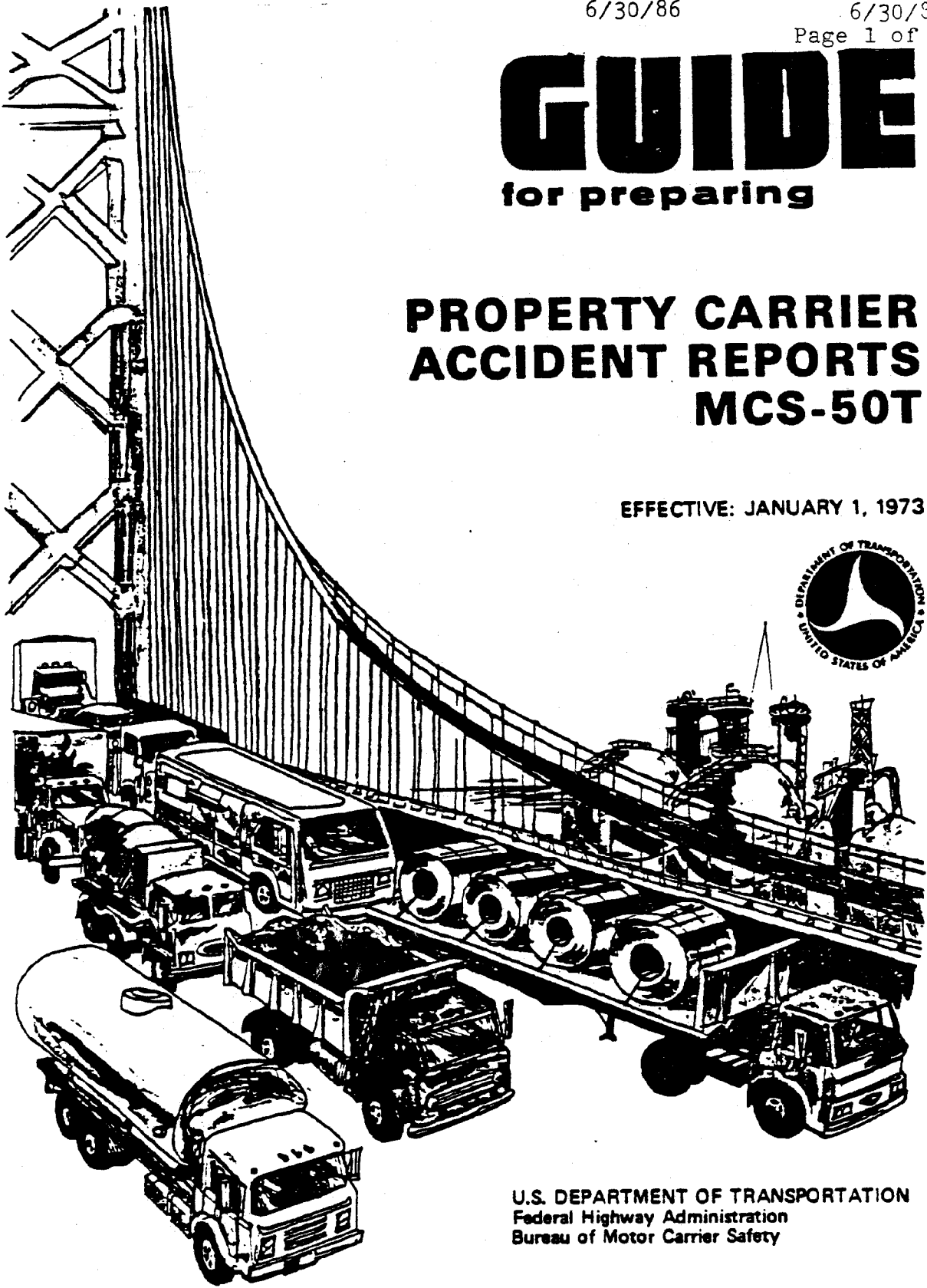
MKIL189540
McK00389

GUIDE

for preparing

PROPERTY CARRIER ACCIDENT REPORTS MCS-50T

EFFECTIVE: JANUARY 1, 1973



U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
Bureau of Motor Carrier Safety

MK094950

MKIL40540

MKIL189541
McK00390

ALL ACCIDENT REPORTS MUST BE FILED ON THE NEW MCS 50-T
(Revised 8-72)

Supplies of accident report forms may be purchased from the Superintendent of Documents, Washington, D.C. 20402, at the prevailing price.
GPO Stock No. 5004-00007

"Reportable Accident" as defined in Section 394.3 of the Motor Carrier Safety Regulations:

- (a) Except as provided in paragraph (b), the term "reportable accident" means an occurrence involving a motor vehicle engaged in the interstate, foreign, or intrastate operations of a motor carrier who is subject to the Department of Transportation Act resulting in -
- (1) The death of a human being; or
 - (2) Bodily injury to a person who, as a result, receives medical treatment away from the scene of the accident; or
 - (3) Total damage to all property aggregating \$2,000 or more based on actual costs or reliable estimates.
- (b) The term "reportable accident" does not include -
- (1) An occurrence involving only boarding or alighting from a stationary motor vehicle; or
 - (2) An occurrence involving only the loading or unloading of cargo; or
 - (3) An occurrence in the course of farm-to-market agricultural transportation (as defined in § 394.5) by the motor carrier.

INSTRUCTIONS FOR COMPLETING ACCIDENT REPORT FORM

All Sections are to be answered. Mark appropriate box in each Section. Record answers by circle or (x). Example:

4. Type of trip (67)	<input checked="" type="radio"/> Over the-road	<input type="radio"/> Local pick-up and delivery operation
-------------------------	--	--

OR

4. Type of trip (67)	<input type="radio"/> Over the-road	<input checked="" type="radio"/> Local pick up and delivery operation
-------------------------	-------------------------------------	---

IDENTIFICATION OF CARRIER

Item 1: Enter complete corporate name. Do not use abbreviations.

Item 2: Enter the address of your principal place of business.

Item 3: MARK ONE BOX ONLY to indicate type of carrier. If box A is marked to indicate private carrier or box C specifying other type carrier insert Employer ID No. (IRS). If box B is marked (ICC authorized), insert MC number. ICC authorized carriers do not include IRS number.

1. Name of carrier (Corporate business name) (7-21) Kirkland Trucking Company	2. Principal Address (Street and no., City, State, ZIP Code.) (22-50) 414 Ridge Road, Greenbelt, Md. 20770
3. Type of carrier (51-55) <input checked="" type="checkbox"/> Private, Employer ID No. (IRS) 1-40615031	<input checked="" type="checkbox"/> ICC authorized MC <input type="checkbox"/> Other (Specify) Employer ID No. (IRS)

LOCATION AND TIME OF ACCIDENT

- Item 4: If over-the-road (intercity) operations mark box A. If local pick-up and delivery operation mark box B.
Mark one box only.
- Item 5: Identify the nearest town or city and State where accident occurred.
- Item 6 and 6A: Identify the accident location as exactly as possible.
- Item 7: Mark appropriate box to identify the day of week on which the accident occurred.
- Item 8: Indicate numerically the date of accident - month/day/year.
- Item 9: Enter the time to the nearest hour. **USE MILITARY TIME.** The comparative times are listed below:

Ordinary Time	Military Time	Ordinary Time	Military Time	Ordinary Time	Military Time
1 a.m.	0100	9 a.m.	0900	5 p.m.	1700
2 a.m.	0200	10 a.m.	1000	6 p.m.	1800
3 a.m.	0300	11 a.m.	1100	7 p.m.	1900
4 a.m.	0400	Noon	1200	8 p.m.	2000
5 a.m.	0500	1 p.m.	1300	9 p.m.	2100
6 a.m.	0600	2 p.m.	1400	10 p.m.	2200
7 a.m.	0700	3 p.m.	1500	11 p.m.	2300
8 a.m.	0800	4 p.m.	1600	Midnight	2400

4. Type of trip <input checked="" type="checkbox"/> Over-the-road (57) <input type="checkbox"/> Local pick-up and delivery operation	
5. Place accident occurred (Nearest Town or City, State) (68-78) Baltimore, Maryland	5A. Type of district (79) <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Rural <input type="checkbox"/> Primarily business
6. Street or highway (Route or Name) (7-16) US 695 (one mile north of US 70 N)	6A. Location if off highway (17-26) N/A
7. Day of week <input checked="" type="checkbox"/> M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> TH <input type="checkbox"/> F <input type="checkbox"/> S <input type="checkbox"/> S (27)	8. Date accident occurred (28-33) 1/22/73
9. Time accident occurred (Military time to nearest hour) (34-38) 2100	

ACCIDENT TYPE

- Item 10A: If noncollision accident, mark box A. If accident involved a collision, mark appropriate box B or C.
Mark one box only.
- Item 10B: If noncollision, mark box A. If collision occurred, mark appropriate box to identify first or primary involved object. Mark one box only.
- Item 10C: If noncollision, mark box ZZZ. Otherwise mark appropriate box for each vehicle to identify the PRIMARY ACCIDENT CLASSIFICATION for each vehicle. Your vehicle is always identified as vehicle No. 1. Other vehicles identified as vehicles 2 or 3. If more vehicles involved, state total number in item 27. **MARK ONLY EVENT FOR EACH VEHICLE.**
- Item 10D: If accident involved a collision, mark box A. If noncollision, mark appropriate box to indicate major accident occurrence. Mark one box only.
- Item 10E: Mark appropriate box to indicate secondary occurrence. Mark one box only.

10. ACCIDENT TYPE (Primary Event)		
10A. Collision (Check appropriate box) (36) <input type="checkbox"/> A Not applicable <input checked="" type="checkbox"/> Collision with moving object <input type="checkbox"/> C Collision with fixed or parked object		
10B. Collision (Check other object involved) (37-45) <input type="checkbox"/> A Not applicable <input type="checkbox"/> E Pedestrian <input type="checkbox"/> I Animal <input type="checkbox"/> B Commercial truck <input type="checkbox"/> F Bus <input type="checkbox"/> J Motorcycle <input type="checkbox"/> C Fixed object <input type="checkbox"/> G Train <input type="checkbox"/> K Other (Specify) <input checked="" type="checkbox"/> Automobile <input type="checkbox"/> H Bicyclist		

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10C. Collision with another vehicle—Accident Classification (Check appropriate box)										zzz <input type="checkbox"/> not applicable	
(46-48) VEHICLES				ACTION		(46-48) VEHICLES				ACTION	
	1	2	3				1	2	3		
A				Slowing—Stopping		L				Intersection	
B				Stopped		M				Passing	
C				Parked		N		X		Changing Lanes	
D				Rear-end		O				Sideswipe—Opposite Direction	
E				Backing		P				Head-On—Crossed Into Opposing Lane	
F				Making Right Turn		Q				Skidding	
G				Making Left Turn		R				Vehicle Out-Of-Control	
H				Making U-Turn		S				Roll-Away	
I	X			Proceeding Straight		T				Controlled Railroad Crossing	
J				Merging		U				Uncontrolled Railroad Crossing	
K				Entering Traffic From Shoulder, Median, Parking Strip or Private Drive		V				Other (Specify) _____	

10D. Non-collision (Check primary event)				C	Jackknife	F	Fire	I Other (Specify) _____	
<input checked="" type="checkbox"/> Not applicable				D	Overturn	G	Loss or spillage of cargo		
(46-57) <input checked="" type="checkbox"/> Ran off road				E	Separation of units	H	Cargo shift		
10E. If not primary event, did accident result in				B	Spillage of hazardous cargo	D	Spillage of non-hazardous cargo		
(58) <input checked="" type="checkbox"/> Not applicable				C	Fire	E	Explosion		

DRIVER INFORMATION

Items 11A through 11H: All items to be filled in for the driver of any vehicle under your direct control whether owned or leased. Enter name and address of the person at the wheel when the accident occurred, or who last drove the vehicle if it was stopped or parked without a driver at the time of the accident.

Item 11D: If driver employed less than 1 year, enter the figure 1. If driver working on an occasional, casual or trip lease basis, enter the figure 0. For definition of employed, see Part 391.

11. DRIVER INFORMATION		
11A. Name of your driver (59-72) Horace James Dobbs	11B. Age (73-74) 42	11C. Social Security No. (7-15) 198 / 48 / 2040
11D. How long employed as your driver (To nearest year) (16-17) 5		

HOURS OF SERVICE

Item 11E: Enter to the nearest hour the *total hours driven* (excluding on duty, not driving time) since last 8 consecutive hours off duty *until time of accident*.
When the 8-hour rest period was accumulated in *two periods* of rest in a *sleeper berth* mark the "Not Applicable" box.

Item 11F: Enter to the nearest hour the *SCHEDULED DRIVING TIME* (excluding on duty, not driving time) needed to complete the run *from beginning to scheduled destination had the accident not occurred*.
EXAMPLE: driving time until accident occurrence — 3 hours, scheduled driving time for entire trip — 10 hours.

11E. Hours actually driving since last period of 8 consecutive hours off duty											
<input type="checkbox"/> 1 hr.		<input checked="" type="checkbox"/> 3 hrs.		<input type="checkbox"/> 5 hrs.		<input type="checkbox"/> 7 hrs.		<input type="checkbox"/> 9 hrs.		<input type="checkbox"/> 11-12 hrs.	
(18) <input type="checkbox"/> 2 hrs.		<input type="checkbox"/> 4 hrs.		<input type="checkbox"/> 6 hrs.		<input type="checkbox"/> 8 hrs.		<input type="checkbox"/> 10 hrs.		<input type="checkbox"/> Not applicable	
11F. Estimated hours of driving for entire trip or portion of trip, since last period of 8 consecutive hours off duty											
<input type="checkbox"/> 1 hr.		<input type="checkbox"/> 3 hrs.		<input type="checkbox"/> 5 hrs.		<input type="checkbox"/> 7 hrs.		<input type="checkbox"/> 9 hrs.		<input checked="" type="checkbox"/> 11-12 hrs.	
(19) <input type="checkbox"/> 2 hrs.		<input type="checkbox"/> 4 hrs.		<input type="checkbox"/> 6 hrs.		<input type="checkbox"/> 8 hrs.		<input checked="" type="checkbox"/> 10 hrs.		<input type="checkbox"/> Not applicable	

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CONDITION OF DRIVER

Item 11G: Mark appropriate box or boxes to indicate condition of driver at time of accident.

ITEM 11H: Indicate the month/day/year of the last DOT medical certificate issued to the driver. If driver has not been physically examined within the last 2 years, enter all zeros.

11G. Condition of driver		<input checked="" type="checkbox"/> Apparently normal	<input type="checkbox"/> Had been drinking	<input type="checkbox"/> Medical waiver
(20-28)	<input type="checkbox"/> Sick	<input type="checkbox"/> Dozed at wheel	<input type="checkbox"/> Other (Specify) _____	
11H. Date of last medical certificate (29-34) 6 / 30 / 86				

CARRIER'S VEHICLE(S)

Item 12: Identify your vehicle(s) involving listing each vehicle in combination. Make no entries for other vehicles involved in the accident.

Item 13: Enter total length of your vehicle or combination, including load.

Item 13A: Enter total width of your vehicle, or cargo, at widest point. Exclude mirrors.

Item 13B: Enter weight of cargo at time of accident. If vehicle was empty, enter 0.

Item 13C: Enter the total weight of your vehicle and cargo. If vehicle was empty, enter weight of empty vehicle.

Item 14: Mark appropriate box for fuel type. If vehicle was powered by liquefied natural gas, electricity, etc., mark box D and enter fuel type.

ALL COLUMNS MUST BE COMPLETED

12. CARRIER'S VEHICLE(S)										
Type (35-39)	Year (40-41)	No. of Axles (42-43)	Make (44-53)	Model No. (54-63)	Company No. (64-69)	TYPE OF BODY (70-74)				
						Van	Flat	Tank	Auto Carrier	Other (Specify)
A Truck										
B Tractor	1970	3	Mack	B-61	214					
C Semi-trailer	1972	2	Fruehauf	T-18	314	X				
D Full trailer										
E Full trailer (2nd)										
F Other (Specify) _____										
13. Total length of vehicle/comb. (7-9) 55 Ft.		13A. Total width of vehicle or cargo (10-11) 8 Ft.				13B. Weight (cargo) (12-17) 40,000 Lbs.		13C. Weight (gross) (18-23) 73,280 Lbs.		
14. Type of fuel <input type="checkbox"/> A Gasoline <input checked="" type="checkbox"/> B Diesel <input type="checkbox"/> C L.P.G. <input type="checkbox"/> D Other (Specify) _____ (24-29)										

TYPE OF CARGO

Item 15: Mark only one box. If your cargo included hazardous materials, specify the classification as described in section 172.5 of the Hazardous Materials Regulations, e.g., F.L. - Flammable Liquids; Expl. A. - Class A Explosives.

Item 16: Indicate the principal type of cargo in your vehicle at the time of the accident. If the vehicle, or any unit of a combination of vehicles, was itself the cargo being transported, mark "F." If your commodity is not listed, mark "other" and specify, e.g., petroleum products; textile; paper and paper products; leather and rubber products; lumber and wood products; food and beverages; livestock; glass and ceramic products; building materials.

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15. Cargo at time of accident (Your vehicle) (30-38)	
<input checked="" type="checkbox"/> A Hazardous materials in cargo (Specify classification)	
<input checked="" type="checkbox"/> Non-hazardous materials in cargo	
16. Check one of the following as principal type of cargo (39-44)	
<input checked="" type="checkbox"/> General freight	<input type="checkbox"/> Motor Vehicles
<input type="checkbox"/> Household goods or uncrated furniture/fixtures	<input type="checkbox"/> Driveway-towaway
<input type="checkbox"/> Metal: Coils, sheets, rods, plates, etc.	<input type="checkbox"/> Gases in bulk
<input type="checkbox"/> Heavy machinery or other large objects	<input type="checkbox"/> Solids in bulk
<input type="checkbox"/> Liquids in bulk	<input type="checkbox"/> Explosives
<input type="checkbox"/> Logs, poles, lumber	<input type="checkbox"/> Empty
<input type="checkbox"/> Mobile home	<input type="checkbox"/> Farm products
<input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Refrigerated foods

RESULT OF ACCIDENT

Item 17: Mark appropriate box.

Item 17A: Mark appropriate box if driver was not killed. (Bodily injury means receiving medical treatment away from the accident scene.)

Item 17B: Mark appropriate box. If no relief driver, mark box C.

Item 17C: Mark appropriate box. If your relief driver was killed, or no relief driver, mark box C.

Items 18 and 18A: Indicate number of **OTHER** persons (do not include driver or co-driver) in your vehicle killed or injured. If no other persons other than driver or co-driver were in vehicle, enter the figure "0." For definition of authorized persons, see Part 392.60.

Item 19: Indicate the total number of all **OTHER** persons (NOT IN YOUR VEHICLE) killed or injured in the accident. Do not include those persons listed in items 18 and 18A.

17. Was your driver killed? (45) <input type="checkbox"/> A Yes <input checked="" type="checkbox"/> B No	17A. Was driver injured? (46) <input checked="" type="checkbox"/> A Yes <input type="checkbox"/> B No	17B. Was your relief driver killed? (47) <input type="checkbox"/> A Yes <input type="checkbox"/> B No <input checked="" type="checkbox"/> C N/A	17C. Was relief driver injured? (48) <input type="checkbox"/> A Yes <input type="checkbox"/> B No <input checked="" type="checkbox"/> C N/A
18. Number of other authorized persons in your vehicle Killed <u>0</u> Injured <u>0</u> (49-50)		18A. Number of unauthorized persons in your vehicle Killed <u>0</u> Injured <u>0</u> (51-52)	
19. Total number of other persons killed <u>0</u> injured <u>1</u> (53-56)		19A. Amount of total property damage in dollars \$ <u>4100</u> (57-61)	

MECHANICAL DEFECT OR FAILURE

Item 20: Mark either box A or B.

Item 21: If mechanical defects or failures were apparent on your vehicle at time of accident, mark the appropriate boxes. Mark each defect known to exist before the accident, brought to light by the accident itself, or discovered by investigation following the accident. Do not show breakage of sound parts which resulted from the accident. Include defects which caused the vehicle to be stopped, if the accident occurred while it was stopped.

20. Were mechanical defects or failures apparent on your vehicle at time of accident? <input type="checkbox"/> A Yes <input checked="" type="checkbox"/> B No (82)	
21. Check appropriate boxes (Mechanical defects or failures) (83-89)	
<input checked="" type="checkbox"/> Not applicable	<input type="checkbox"/> Steering system
<input type="checkbox"/> Fuel system	<input type="checkbox"/> Suspension
<input type="checkbox"/> Wheels and tires	<input type="checkbox"/> Transmission
<input type="checkbox"/> Driveline	<input type="checkbox"/> Engine
<input type="checkbox"/> Brakes	<input type="checkbox"/> Lights
<input type="checkbox"/> Coupling	<input type="checkbox"/> Other (Specify)

SEAT BELT EQUIPMENT AND USAGE

Item 22: Mark either box A or B.

Item 23: Mark either box A or B.

22. Was your vehicle equipped with seat belts? <input checked="" type="checkbox"/> A Yes <input type="checkbox"/> B No (70)
23. Were seat belts in use by your driver(s) at time of accident? <input checked="" type="checkbox"/> A Yes <input type="checkbox"/> B No (71)

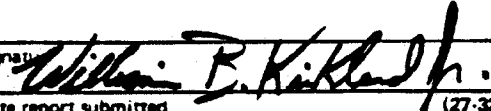
OTHER VEHICLES INVOLVED

Items 24A, 24B, 24D, and 24E: If another vehicle involved in the accident was operated by a motor carrier, regardless of ownership, the name and address of that carrier should be given. If not a motor carrier, write the name and address of the person who was operating the vehicle at the time of the accident.
Items 24C and 24F: For the type of vehicle enter general terms such as car, bus, truck or tractor-trailer.

24. OTHER VEHICLES INVOLVED		
24A. Company name or operator (Vehicle #2) William J. Kurz	24B. Address 384 Bright Dr., Silver Spring, Md. 20904	24C. Type of vehicle Automobile
24D. Company name or operator (Vehicle #3) N/A	24E. Address N/A	24F. Type of vehicle N/A

DRIVING CONDITIONS AND ACCOUNT OF ACCIDENT

Items 25 and 25A: Mark appropriate boxes to indicate general prevailing weather conditions and lighting conditions.
Items 26 through 26B: Mark appropriate boxes to indicate road surface condition, number of lanes, and if the highway was divided by a median or curbing.
Item 26C: Mark appropriate box.
Item 27: An account of the accident containing the most reliable information to which the motor carrier has access at the time of reporting, sufficiently detailed and complete to convey an understanding of his version of the accident shall be entered under this item. This account should be continued on an extra sheet of paper if more space is needed.
Item 28: Print or type name and title of person signing report.
Items 29, 30 and 31: Complete appropriate entries. In item 30 include area code.

25. Weather (7-12) <input checked="" type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Cloudy/overcast <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Fog/Smog <input type="checkbox"/> Sleet <input type="checkbox"/> Other (Specify)		25A. Light (13-18) <input type="checkbox"/> Day <input type="checkbox"/> Dawn <input type="checkbox"/> Dusk <input checked="" type="checkbox"/> Dark <input type="checkbox"/> Artificial lights <input type="checkbox"/> Other (Specify)	
26. Road surface (19-23) <input checked="" type="checkbox"/> Dry <input type="checkbox"/> Snowy <input type="checkbox"/> Other <input type="checkbox"/> Wet <input type="checkbox"/> Icy (Specify)	26A. Total number of lanes (24) <input type="checkbox"/> One lane <input checked="" type="checkbox"/> Three lanes <input type="checkbox"/> Two lanes <input type="checkbox"/> Four or more lanes	26B. Type of highway (25) <input checked="" type="checkbox"/> Divided <input type="checkbox"/> Undivided	
26C. Check appropriate box <input type="checkbox"/> Entrance ramp (Expressway) <input type="checkbox"/> Exit ramp (Expressway) <input checked="" type="checkbox"/> Not applicable (26)			
27. Account of accident by carrier official Passenger car was changing lanes and did not completely clear our company's vehicle. The passenger car's rear section struck the left front of the company's tractor causing damage to both vehicles and minor injury to both drivers.			
28. Name and title of person signing report William B. Kirkland, Jr. Owner		29. Signature 	
30. Telephone Number Area Code 301-345-2890		31. Date report submitted (27-32) ...1../...23../73...	

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McKesson
Operations

Section	Reference	Page	End
TRANSPORTATION	30.63	1	X
Subject	Issue Date	Effective Date	
EMPTY TANK CAR INSPECTION REPORT	9/15/85	9/15/85	

GENERAL

Federal Railroad Administration now requires users of tank cars to perform empty tank care inspections prior to the cars' release. Along with the inspection form (Exhibit 1), we must also comply with the following:

WHILE
UNLOADING

1. Check wheels
2. Rail sign - STOP - Tank Car Connected
3. Disconnect all lines and hoses overnight.

EMPTY CAR

1. Reverse placards (if applicable)
2. Tighten all valves, domes, caps, plugs, etc.
3. Complete empty tank car inspection report.
4. Remove sign from track.

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EMPTY TANK CAR INSPECTION REPORT

Car No. _____ Spot _____ Date / /

Last Material _____ Size _____ Time _____
J/C, T/C, ETC.

- ☐ EMPTY ☐ UNLOADING VALVES CLOSED
- ☐ HATCH GASKET CONDITION ☐ HATCH CLOSED & BOLTED
- ☐ PLACARDS TURNED ☐ UNLOADING CONNECTION CAPPED

Inspected By _____

~~WHITE - OFFICE~~ ~~CANARY - PLANT~~

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McKesson
Operations

Section	Reference	Page	End
TRANSPORTATION	30.65	1	X
Subject	Issue Date	Effective Date	
TRAINER MANUAL FOR DRIVERS	9/15/85	9/15/85	

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- Chapter 3 - Getting to Know the Vehicle and Components
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b. Specific Driver Responsibilities
- Chapter 7 - Road Conditions and Weather
- Chapter 8 - Rules and Regulations

INTRO-
DUCTION

This manual is published by the Private Truck Council of America, Inc. and is one of only a few training text books available today.

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McK00399

CHEM OP 30.65 Exhibit 1
9/15/85 9/15/85

DRIVER TRAINER MANUAL

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CHAPTER I

THE DRIVER TRAINER

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THE DRIVER TRAINER

In many cases the only contact between a company and its customers is the truck operator. Likewise, the impression the public has of a company is greatly influenced by the condition of its motor vehicles and how the drivers handle them. It is essential the company have truck operators who are capable of assuming the responsibilities of the position as well as promoting good customer relations and the good will of the public.

This is not accomplished without effort. After proper selection, proper training of the truck operators in all aspects of their duties and responsibilities is essential. To achieve uniformity in training, and to lessen the possibility of untrained drivers being placed into the operational flow of a company's distribution system, a training program should be established. Driver training takes time, money, equipment, plant facilities and trained personnel. But it will more than repay the company through improved customer and public relations, conservation of company equipment and, most importantly, through the reduction of losses from accidents.

The driver training plays a vital role in this training program. Once a commitment to driver training has been made by the company, the driver trainer is the one who will implement it and be the guiding force involved in it.

Full-Time or Part-Time Driver Trainer

Among the considerations that must be given to the use of driver trainers is whether they should be full-time or part-time positions. There is no definitive answer. A company must make this decision based on a number of factors, among which are personnel needs, type and complexity of training needed, geographical spread of the organization and other such factors.

An "experienced" or "senior" driver may be assigned the driver training duties on a part-time basis. A new employee might be teamed with him for a few days or a few weeks to determine his driving capabilities while also training him in the proper use of equipment, paperwork, and so forth. He could also be identified as a driver trainer only when the training service is needed, for however long it takes, and then work as a regular driver all other times.

The type of operation will determine the number of trainees the full-time driver trainer will be able to handle. This should allow for the development of training materials, training of new drivers, retraining of in-service drivers and other job assignments. A full-time driver trainer may have sufficient work at one location or may travel to several locations.

When needed, a company driver training school should be considered. If a company school is established, all new drivers should be scheduled to attend before they are allowed to drive company equipment. Once this formal training has been accomplished and the employee returns to his operational location, the new driver should be teamed with an experienced driver to continue his training, gaining more experience while being productively employed.

There are times when drivers with tenure have difficulty maintaining their driving professionalism. The company

driver training school presents the ideal way to take these drivers out of their everyday environment for retraining under controlled conditions. If handled correctly, this should give the driver a different perspective on his driving and how the company wants him to operate their vehicles.

Qualifications of a Driver Trainer

Regardless of whether the company wants only a part-time driver trainer or a more elaborate training staff, the person(s) selected to do the training must have certain qualifications. Among these qualifications are:

- a mature and personable individual who is respected and relates well to others when working with them or teaching them.
- a minimum of 3-5 years driving experience with a satisfactory safe driving record.
- able to explain and demonstrate driving skills and vehicle handling.
- knowledgeable in company policies, procedures, practices, rules, paperwork, etc., ... as well as state and federal laws and regulations relative to vehicle operations and able to instruct and interpret in these matters.
- able to understand and interpret driver tests and performance records to determine when training and retraining are necessary.
- personally neat and able to encourage others to maintain themselves and their vehicles in the same manner.
- able to plan, organize and record his work in an orderly manner and to do so without the need for constant supervision.

Along with all the above, probably the most important attribute would be the DESIRE to teach. The desire to teach will motivate the driver trainer to prepare properly and teach with enthusiasm. The preparation and enthusiasm the instructor has will be quickly recognized by the student drivers and make it that much easier to accomplish the training goals.

The above qualifications are basic for the position of driver trainer. Particularly in regard to knowledge of company policies, procedures and products, it might be wisest to look within the organization for a prospective driver trainer. However, the search should not exclude likely candidates from outside the company.

Instructor training is offered at a number of locations around the country by the National Committee. Information may be obtained by writing:

National Committee for Motor Fleet Supervisor Training
Institute of Public Safety
The Pennsylvania State University
University Park, PA 16802

Other sources would be local community colleges, high school adult education courses or local, state and national industry associations offering instructor training, and vehicle leasing companies.

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Duties of a Driver Trainer

Once a decision has been made to appoint a driver trainer, whether part-time or full-time, his responsibilities and authority must be established. His first and foremost responsibility should be the training of all driver personnel of the company. Typical formal training might include:

- introduction and orientation to the company which should include at least the who's who of the company, what the company does or manufactures, the driver's obligations and responsibilities, his benefits and the company's operational procedures, rules and regulations.
- knowledge of local, state and federal regulations affecting the company and vehicle operation.
- pre-trip vehicle inspections and daily vehicle condition reports.
- on combination units — unhooking and hooking up.
- proper driving skills, including the mechanics of operating the equipment as well as techniques for properly driving on the highway for safety and energy conservation.
- loading and unloading procedures, securing of loads and other safe work habits.
- knowledge of traffic rules.
- proper handling and completion of necessary paperwork and records.

- emergency procedures while on the road and for type of commodity.
- accident procedures including what to do, when to do it and appropriate reports. This could include a course in emergency medical training and cardio-pulmonary-resuscitation (CPR).
- any other training in special conditions or procedures that the company might desire.

The driver trainer should teach and develop a positive attitude toward safety. He should also develop appropriate teaching plans and utilize necessary visual aids and equipment.

As part of his job, the driver trainer should have the responsibility of road testing prospective and new drivers, and when appropriate, administering the written test as required by the Department of Transportation. The driver trainer's judgment of the prospective driver's ability to handle the vehicle should be a major factor in determining whether he will be acceptable as a driver. Also, it is the first indication to the driver trainer of the type of driver coming on board and what training will be needed.

It should be noted that all suggested activities relate to the driver trainer's primary responsibility. All activities that enhance his ability to train drivers will allow the company to develop skilled operators who can perform their assigned tasks safely and efficiently.

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CHAPTER 2

EFFECTIVE TEACHING METHODS

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EFFECTIVE TEACHING METHODS

Undoubtedly, teachers have left their mark on us in how we think and react to situations. You, as driver trainers, will certainly have an influence on those that you train. The degree of influence will depend on your preparation, enthusiasm and ability to motivate your trainees. As a driver trainer you are sold on safety and defensive driving practices, so you should instill the same desire in your trainees.

This will be your first challenge. Through contact you learn what "turns him on." Use this in selling the importance of driving safely — maybe he is a hunter, golfer or bowler — use this "hobby." Most of our trainees want to do the best job of driving possible most of the time. It's up to you to find the key that creates a desire for him to learn and practice safe driving procedures.

Effective Instruction

Your trainees should return home feeling that the training they have just completed was well presented in clear, understandable terms and that your methods were the best possible for the subject.

Following is an outline on "How to Instruct" and then, some simple, practical suggestions for making your instruction more effective. This latter listing should be considered as a suggested check list to clarify points and to help you. The suggestions are divided into two groups: A. *Before* meeting with your trainee, and B. *While* meeting with your trainee.

How to Instruct

Step 1 — Prepare the Driver Trainee

- A. Put the trainee at ease.
- B. State the job and find out what he already knows about driving.
- C. Motivate him.

Step 2 — Present the Operation

- A. Tell, show and illustrate *one important step* at a time.
- B. Stress each *key point*.
- C. Instruct clearly, completely and patiently, but no more than he can master.

Step 3 — Try Out Performance

- A. Have him do the job — correct any errors.
- B. Have him explain each *key point* to you, as he does the entire job again.
- C. Make sure he understands.
- D. Continue until you know he knows.

Step 4 — Testing

- A. Put him on his own.
- B. Give critique of performance.
- C. Answer questions.

REMEMBER, IF THE TRAINEE HASN'T LEARNED, THE TRAINER HASN'T TAUGHT!

Essentials of Effective Teaching

A. Before Meeting with Your Trainee:

1. Be prepared. You are a professional driver and instructor who must both understand and practice expert driving techniques. As a driver trainer, you must strive for perfection, both behind the wheel and as a teacher. You must be *enthusiastic* and *believe* in what you are going to teach.
2. Have your objectives clear in your mind. This varies, of course, depending on the trainee's experience, but you should have a planned course of action to take once you have determined his capabilities. For example, should your trainee be an experienced driver, your plans would include *perfecting* his skills as quickly as possible, rather than waiting, as might be expected with the driver with less experience.
3. As most human minds can grasp only a few things at a time, it's important *not* to attempt to teach too much at once. Let's take shifting as an example. If his experience is limited, a beginner might become nervous and confused using the tachometer. When he's unable to shift the transmission, the instructor might better *tell* him when to shift, waiting until that has smoothed up to teach anticipating and shifting with a tach.
4. Plan your work so as to get the trainee participating as much as possible. For example, during the first vehicle inspection, he would feel much more comfortable and learn more by listening and watching during the entire inspection.

B. While Meeting with Your Trainee

1. Always speak with *enthusiasm*! Your interest and desire will be contagious. Be this way from the instant you meet your trainee and until he leaves. An instructor interested in helping people should *not* find himself in a position of *forcing* himself to be enthusiastic. Under these circumstances, you could lose your effectiveness and should not carry on with future training.
2. Be *sympathetic*. Remain *calm* and *patient*, regardless of what is happening. There are, naturally, occasions where "being calm" is extremely difficult. "Losing your cool" could only bring more problems.
3. *Never humiliate a trainee!* Never indicate by your actions that you consider that he lacks intelligence. As pointed out above, be patient and strive even harder to get the point across.
4. Never talk *down* to your trainee; that is, avoid insulting his intelligence by assuming an air of superiority. You'll lose his respect quickly! (Not one of us enjoys listening to someone who is continually reminding everyone that he possesses far more talent than we do.)
5. Create an atmosphere of *informality*. Your job of teaching will be easier and more effective.
6. Respect each trainee's viewpoint but make your own

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perfectly clear. Consider mirror use as an example. Some drivers are *not* convinced that mirrors need checking while turning, unless they are aware of a potential hazard. You could agree by stating that if all drivers did this, you're sure there would be a lot fewer accidents. However, to form any habit, it must be continuously practiced; that there could be a situation requiring a close mirror check that a driver was *not* aware of. Another thought is this: Mirrors are checked for *two* reasons: to keep track of what is going on, and to *keep your eyes moving*. Avoid arguments! The chances are good that an example of what you are trying to sell will come about and you will be able, courteously, to point it out without saying "I told you so."

7. If a trainee is unable to perform some task, such as split-shifting, take the wheel and demonstrate it. This

should accomplish a couple of things. First and foremost, it is easier to *watch* how this is done rather than to *hear* how. Secondly, you earn more respect when you're able to perform what you expect him to learn. Most of us are quick to sense the "armchair" instructor.

8. Be *complimentary*. When the trainee has done something correctly, take time to tell him. We all enjoy a "pat on the back" and it will encourage him to continue doing his best.

It must be remembered that a *driver trainer's* primary function is to develop and teach drivers to be safe and efficient. Your sincere interest in helping will be long remembered and should *create* the desire to follow your recommendations and become a top-notch professional.

"ANALYZING THE LEARNER"

Type of Learner	Characteristics of Learner	Training Approach	Pitfalls to Avoid	The Payoff
The Slow Learner	May be nervous, inexperienced, or have language problem. May also feign experience.	Emphasize accuracy rather than speed. Go easy and provide ample time for questions, trial and error. Offer encouragement. Repeat instructions if necessary. Show enthusiasm.	Avoid showing impatience or irritation to avoid discouragement.	Because it was not easy for him, the slow learner, well-trained, is likely to retain the learning, making a steady, reliable driver.
The Older Driver	Has the double problem of learning something new while <i>unlearning</i> old habits.	Relate the new to the old as much as possible. Point out differences, make comparisons. Adjust speed to his pace.	Beware of patronizing. Be on lookout for signs of physical strain.	The older driver who has mastered something new is grateful for the opportunity. Can be both conscientious and reliable.
Experienced Man	Assumes that because type of job is the same, there's nothing you can teach him.	Insist on use of your company methods. Step by step, compare your methods and his, noting similarities and differences. On the differences, mark point of departure and give reasons for change.	Don't belittle his past experience or suggest in any way the methods he has used were wrong for the job he was doing.	Eventually, the driver hired from another firm for the same line of work is in a position to come up with suggestions on how to improve methods.
Eager Beaver	Anxiety to please causes him to say he knows how, or to ask questions just to get your attention.	Listen to his questions patiently but try to get him to answer them himself. This uncovers the unnecessary questions and helps you to check his real knowledge.	Be cautious when he says "no" to your "any questions" or if he says "when do I try it?" Don't let him make you eager to end the training.	His eagerness will make him receptive to new assignments. Make sure he understands everything.
Careless Learner	Really doesn't care, or just never got into the habit of paying attention to details, or never had a good trainer.	Talk to him privately and try to find out what his reasons are. Focus on importance of attention to detail. <i>Motivate</i> him to aim for accuracy. Forget speed for now.	Don't hesitate to call his attention to any detail overlooked or sloppily handled. Tell why this won't pass. Give ample time for practice under supervision.	The careless driver who is not checked early in the game will add heavily to department costs through errors, waste or accidents. Nip bad habits and avoid later headaches.

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The Driver Trainer's Responsibilities

We repeat, a driver trainer's primary job is *teaching*. This would include driving skills, loading and unloading procedures, plus all other functions that are involved in your operations. If unusual weather or road conditions exist, it might be better for you to keep the wheel for the safety of all involved. It should also be pointed out that you should not expect too much from a driver with limited experience. We would all agree to the necessity of being *told* how to do a job properly, but we catch on more quickly after being *shown* and getting the chance to try it ourselves. In some cases, procedures may need several demonstrations.

If you feel that the new driver needs additional training

after the normal training period, we expect you to contact the trainee's supervisor.

A written report (road test check sheet) should be completed and filed on each trainee for the time spent training. Some trainers find it beneficial to let the trainee see a blank report *before* driving. Most certainly, you should go over the driver's progress with him at the end of each day.

Scheduling Trainees with the Driver Trainer

Check local regulations to determine the amount of training before licensing. Some states require all commercial vehicle operators to be qualified in accordance with Federal Motor Carriers Safety Regulations. *You should not release a trainee until he is a qualified operator.*

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CHAPTER 3

GETTING TO KNOW THE VEHICLE AND COMPONENTS

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GETTING TO KNOW THE VEHICLE AND COMPONENTS

1. Introduction

The purpose of this session is to familiarize driver with the characteristics of the types of vehicles he may drive.

All drivers, regardless of experience, should be exposed to an introduction to the vehicles, both power and trailer. The schedule can be expanded depending on the experience of the driver. The following is a minimum.

Classroom — This session can include lectures, films, company policy on equipment and maintenance, emergency procedures and general discussion. The time required can vary from 1 hour to 1 day.

Road Training — This can be divided into two sessions as follows:

- (1) Discussion using vehicle but practice off-road driving.
- (2) Road driving, 10 or more miles, to demonstrate the characteristics of the vehicle.

2. Classification of Vehicles

For drivers changing from one type of vehicle to another, it is very important that the vehicle characteristics be thoroughly covered. For example, a tractor driver changing from a van trailer to a tank trailer must learn the difference in design and the effect on handling. This remains true even though different loads are carried in the same type van trailer all the time.

An outline should be prepared of the key points to be covered so it can be discussed and also provided to the driver.

3. Components of Vehicle

The design, construction and equipment must be explained, with emphasis on the relationship to handling characteristics. Although a knowledge of the vehicle is valuable, even more important is an explanation of why the company uses certain vehicles. The following are important areas to explain for both power vehicles and trailers.

Engine	Tires
Power Train	Suspension System
Steering	Mirrors
Fifth Wheel	Auxiliary Systems
Cab Equipment	Safety Features
Braking System	

4. Vehicle Failure

Instruction should be given concerning failure of any part of the vehicle on the road and what action the driver is to take.

5. Warming-up Engine (see Chapter 5)

Instruction should be given on required procedures to be

taken as the engine is warming up. A check list of items should be used as a teaching aid and given to the driver. Also, instruction should be given on action to be taken if all components are not working properly.

6. Training Aids

Various types of training aids can be used for more effective training. The more the driver can "see" and "do," the more he will remember. A simple drawing on a blackboard or a sketch of the equipment will help the driver understand the information. Films, pictures and books are very effective.

An outline can be useful to both the trainer and the driver trainee. If the trainer wishes, the outline can be filled in completely so all points to be presented are in the outline. The following outline is an example on a braking system.

1. Compressor
2. Governor
maximum and minimum air pressure
3. Brake valve
foot operated — controls brake air pressure
4. Brake Chambers
5. Slack Adjusters
6. Tubing and fittings
7. Safety Valve — pop pressure _____
8. Reservoirs — regular and emergency
9. Back Pressure Check Valve
10. Reservoir Drain Cocks
11. Air Gauge
12. Low Pressure Indicator — pressure _____
13. Stop Light Switch
14. Quick Release Valve
15. Front Wheel Limiting Valve
16. Hose Couplings
17. Spring Brake Assemblies
18. Tractor Protection Valve Control
19. Tractor Protection Valve
20. Independent Trailer Control Valve
21. Parking Brake Control
22. Spring Brake Emergency Release
23. Relay Valve
24. Relay — Emergency Valve

Summary

To check the effectiveness of the instruction, the trainer may request the driver to repeat the information back to the trainer. Another technique is to give a written test, perhaps using multiple choice questions, such as this one:

In parking a tractor, semi-trailer, you should always use:

- a. independent trailer control valve
- b. trolley valve
- c. spring brakes
- d. front wheel limiting valve

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CHAPTER 4

PRE-TRIP INSPECTION

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PRE-TRIP INSPECTION

Introduction

There are many and varied methods of making pre-trip inspections. Several are outlined in this manual. Following is a reasonably detailed minimum check type of inspection. For assistance, at the end of the chapter are several outlines of pre-trip driver inspection and vehicle condition reports.

Remember that the proper training of a new driver, plus the orientation of a new-hire, experienced driver in your desired method of pre-trip inspection is the first step in on-the-road safety and major reduction of unnecessary breakdowns on the road.

Methods of Making Pre-Trip Inspection

Carefully explain the need for a good pre-trip inspection. Answer all questions. Erase all doubts as this is the first step in insuring that the new driver understands the need for him properly to care for and maintain his company equipment.

Pre-Trip Inspection and the New Driver

Every new driver should be trained and tested on three important facets in which he, as a professional, should be proficient. They are the pre-trip inspection, recognition and reporting of defects in the equipment, and actual operation of the equipment. An experienced, but newly hired, driver should also be expected to demonstrate sufficient proficiency in these areas to meet your standards. If the experienced or well-trained candidate cannot meet expectations in these areas, he should not be considered further.

One method to check knowledge and interest in pre-trip inspections is to prepare a vehicle (truck, tractor-trailer, or other vehicle with the same features as the vehicle to be operated) with some safety defects which the candidate driver should detect and report.

Prior to the time applicants are to report, set up your testing equipment so as little time as possible is lost in screening. Below is a procedure which has proved effective.

- A. The vehicle — A truck or tractor suitable for the required testing should be spotted near dock and office area. This vehicle should have been prepared to test the candidate for knowledge of safety and mechanical requirements. Some prepared problems would be:
 1. Disconnect one head lamp.
 2. Disconnect right hand windshield wiper (hose, if vacuum, or air electric wire, if electric).
 3. Remove bulb from one of rear directional lights and one of the taillights.
 4. Disconnect horn.
 5. Improper tire pressure.
 6. Loose lug nuts.
 7. Missing safety equipment.
 8. Low coolant.
 9. Dirty, improperly adjusted mirrors.
 10. Improperly secured cargo.
- B. None of the first four defects will seriously affect operation of the truck. They are safety features built into

the equipment to alert the public of the driver's intentions and to give him and the vehicle means to operate safely. The last six are critical safety items and should be corrected before actual operation.

Pre-Trip Inspection Explanation

Following is an example of a pre-driving inspection in great detail. It can be followed, modified, adapted as needed to suit your purpose.

The driver trainer should demonstrate how to make a good, thorough pre-trip inspection. As he goes through the established procedure, he should point out the reasons behind the inspection of essential equipment and what to watch for during the inspection. Each trainee should then make an inspection to demonstrate his proficiency and familiarity with the established procedure, and the procedure should be used as his own.

The sequence of the pre-trip inspection may differ according to the type vehicle and vehicle configuration. The essential elements are listed in this procedure but should be modified to meet your needs.

1. BEFORE ENTERING CAB

- A. *Check for leaks and fuel level.* Look under and around the vehicle for any evidence of oil, fuel, water or radiator coolant. See if there is any apparent damage to the undercarriage of the vehicle or any body damage.
- B. *Disconnect engine block or radiator heater plug* if your vehicle is equipped with this device. Then secure the heater cord in its proper place.
- C. *Check the level of the oil.* Watch for unusually thin, dirty or foaming oil on the dip stick. If oil is low, fill to proper point. If there is too much oil, report it to your supervisor immediately.
- D. *Check the radiator coolant* to be sure it is at the proper level. Remove the radiator cap carefully, relieving the pressure slowly so the coolant won't splash into your face. In the summer, add coolant if necessary. In the winter, check the solution with a hydrometer to be sure that it is the proper mixture specified for that time of year in your area. If necessary, add coolant or the mixture of anti-freeze required. If a large amount has to be added, this should be reported to your supervisor. It could mean that there have been leaks or that the engine has been running too hot.
- E. *Check engine compartment* for any evidence of worn or loose belts, cracked or worn wiring, faulty hoses or leaks in any of the lines. Correct and report any serious defect you discover.
- F. *Turn on battery disconnect switch* if vehicle is so equipped.

2. ENTER CAB

- A. *Insure the parking brake is set.*

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- B. *Check that gear shift lever is in neutral position.*
- C. *Start the engine.* (Please refer to Manufacturer's instructions for your vehicle.) When starting, you should use only the amount of choke or prime necessary. In warm weather, you may not have to choke at all. Depress the clutch pedal to about 1 inch from the floor in order *not* to burn up the clutch brake and to relieve the starting engine of the drag of the transmission. Never run the starter for more than 10 or 15 seconds at a time. If the engine doesn't start, wait several seconds and try again. Once the engine is started, *check the oil pressure gauge*. If proper pressure is not indicated, stop the engine immediately and discover the trouble before attempting to start again. *Don't race the engine* — this causes unnecessary wear. Set the throttle at slightly above idle speed and allow engine coolant to warm.

3. IN CAB — DURING WARMUP

- check fuel gauge and other instruments
- is your *ammeter* registering charge?
- is your *air pressure* building up?
- switch on all *lights and accessories* and your *left turn signal indicator*
- do your *windshield wipers* work?
- is your *heater and defroster* operating?
- does your *dimmer switch* operate and give you the proper signal?
- *adjust your seat* for maximum comfort. Be sure your feet rest squarely on accelerator, brake and clutch. Select the adjustment that suits you best.
- after adjusting your seat, *adjust your mirrors* for maximum vision. Proper mirror settings are shown in Chapter 5. Are the mirrors clear?
- check *all emergency equipment* for location and serviceability (includes fire extinguishers, fuses, emergency reflectors and chains in season).

4. OUT OF CAB — DURING ENGINE WARMUP

- A. *Check headlamps and front left turn indicator.*
- B. *Check cab marker lights.*
- C. *Check air hoses and electrical connections* between tractor and semi-trailer. Are hoses sound and properly coupled? Are there leaks?
- D. *Check tires on left side.* Watch for excessive tread wear, foreign objects in tread, cuts or sidewall damage, proper inflation. Are wheel lugs tight? Rust around lug could indicate a loose one.
- E. *Check rear marker lights, reflectors, rear left turn indicator, anti-override protection and splash guards.*
- F. *Check left side marker lights and reflectors.*
- G. *Check outside fire extinguisher(s)* if required.
- H. *Check cargo securing devices and spare tire.*

5. IN CAB — DURING ENGINE WARMUP

When you have completed your check of the left side, return to the cab and flip the *headlamp dimmer switch* and turn your *turn indicator* from left to right. While in the cab, make a quick *check of your instruments* and set the independent trailer brake control to *activate stop lights*. Now you are ready to step out and check the right side.

6. OUT OF CAB — DURING ENGINE WARMUP

- A. *Check your headlamps again* — this gives you a complete check on both high and low beams.
- B. *Check right front turn indicator.*
- C. *Check "Fifth Wheel" lubrication, cracks, mounting, locks, king pin engagement.* If hooked to trailer, be sure safety catch is engaged.
- D. *Check air hoses* and electrical connections again.
- E. *Check tires and wheel lugs* on right side thoroughly, just as you did on the left side.
- F. *Check right rear turn indicator, reflectors and stop lights.*
- G. *Check side marker lights and reflectors.*
- H. *Check all unloading accessories* — hoses, couplings, fittings, faucets, wrenches and tools if you have a tanker; for flatbed, check cargo securing devices and spare tire. Is everything in its proper place and in good condition?
- I. If *fire extinguisher* is required on right side, is it sealed and charged?
- J. *Check for water in air tanks* and proper functioning of low air pressure warning indicator.
 - 1. If required, set wheel chocks so vehicle is secure.
 - 2. Open pet cock on No. 1 (main air tank/wet tank) until all water is drained. Then close pet cock. (If there appears to be an excessive amount of water or a slug of water, report it to maintenance personnel so automatic water drain can be checked.) This draining should not activate low air pressure warning indicator. If it does, the check valve between No. 1 and No. 2 tanks is not holding and should be reported to maintenance personnel.
 - 3. Open pet cock No. 2 tank (dry tank) and allow air pressure to drop until the low pressure warning indicator is activated. Then close the pet cock.
 - 4. Allow air pressure to build back up to normal pressure.
 - 5. Remove wheel chocks and store properly.
- K. *Check sanders* if vehicle is so equipped — *and chains* when required for the winter.
- L. On double bottom rigs, *check pintle hook* to see that jaws are closed and locked; insure safety cables or chains are properly attached. Visually check dolly and mounting bolts.

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7. IN CAB — DURING ENGINE WARMUP

Return to cab to complete the pre-driving inspection.

- A. *Fasten your seat belt.*
- B. *Recheck all instruments.* Has engine warmed up? Is oil pressure still O.K.? Does low air pressure indicator cut off when air pressure has been restored to normal?
- C. *Set Independent Trailer Brake Control.* Then, by rocking the tractor in first low gear and in reverse low, you can feel if there is excessive slack in the king pin lock and fifth wheel. If there seems to be excessive movement, report it immediately to your supervisor.
- D. *Check tractor protection valve.* Flick the lever from "Normal" to "Emergency." This should activate trailer brakes. Check by placing tractor in low first gear. If trailer brakes have not locked, report it immediately to your supervisor. If trailer brakes locked, flip lever back to "Normal" and again check to be sure brakes are released. This procedure will show without uncoupling the trailer emergency air hose that tractor protection valve is working properly. This valve conserves the tractor air supply to stop the vehicle safely in case of an emergency. It works automatically when pressure drops to 40 pounds, or it can be operated manually.

8. IN CAB — TESTING BRAKES

- A. *Test the service brakes.* With air pressure set at maximum, stop the engine and apply the brakes fully. If the air pressure drops more than three pounds in one minute on a single vehicle or more than four pounds in one minute on a combination vehicle, something is wrong in the air system. Report it immediately to your supervisor and do not drive the vehicle until the air system has been corrected.
- B. *Test the parking brake.* Permit vehicle to roll very slowly and apply the parking brake. If the brake does not hold, you have no parking brake. If it does not hold, report it immediately to your supervisor and do not drive until this has been corrected.
- C. *Test independently your service and trailer* at slow speed (5-10 mph) before leaving yard.
- D. Complete pre-trip requirement on vehicle condition report.

9. SPECIAL EQUIPMENT

Since the equipment has wide variance, each company should use own check list for special equipment.

If you have found any defects in your vehicle, you will note them on your daily vehicle condition report and get a decision from your supervisor on whether the vehicle should be operated.

SAMPLE PRE-TRIP INSPECTION OUTLINE

1. Approaching the vehicle, look for leaks and apparent damage underneath and on vehicle.
2. Under hood — check oil.
3. Under hood — check radiator coolant.
4. Under hood — check belt drives.
5. Under hood — check wires.
6. Under hood — check fuel line for leaks.
7. If so equipped, turn on battery disconnect switch and disconnect engine block/radiator heater plug; secure heater cord.
8. In cab, start engine — check for normal accessory operations and instrument readings.
9. Adjust mirrors — clean if needed.
10. Turn on all lights and check through rearview mirrors; check dimmer switch and dash indicator.
11. Set independent trailer brake control to activate stop lights.
12. Outside — check l/f wheel, nuts, tire.
13. In front of unit, check headlamps, cab and body lights.
14. In front of unit, look under at front axle and steering.
15. Check r/f wheel and tire.
16. Check security of spare tire, fuel tank.
17. Check r/f drive wheels, tires, splash guards.
18. Check rear springs, air lines, etc.
19. Check r/f, centr. r/r lights and reflectors.
20. Check trailer landing gear, fully raised.
21. Check trailer landing gear handle secured.
22. Check trailer spare tire and cargo securing devices.
23. Check r/r wheels, tires, splash guards.
24. Check r/r springs, shackles, air lines, frame.
25. Check rear lights, doors secured, override protection.
26. Check l/r springs, shackles, air lines, frame.
27. Check l/r wheels, tires, splash guards.
28. Check cargo securing devices.
29. Check l/r, center, l/f lights and reflectors.
30. Check l/r drive wheels, tires, splash guards.
31. Check/test fifth wheel mountings, lock/kingpin engagement.
32. Check air hoses and electrical connections to trailer.
33. Drain air tank, check fuel tank, battery box.
34. Clean glass and check w/s wipers.
35. Check safety equipment — emergency reflective triangles, chains, fuses, fire extinguisher(s), fuses.
36. Check brakes (full air application). Air pressure below 40 psi, check on pressure buildup. If air pressure above 60 psi, deplete air until warning device works. Vacuum below 8 in. hg., check on build-up; above 8 in., deplete vacuum until device works.
37. Check tractor protection valve.
38. If trailer coupled, ease tractor forward with trailer brakes set. Crank up trailer dolly as far as possible. Secure crank to hook.
39. Complete driver inspection report.
40. Check brakes at slow speed on level ground in yard.

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Company _____

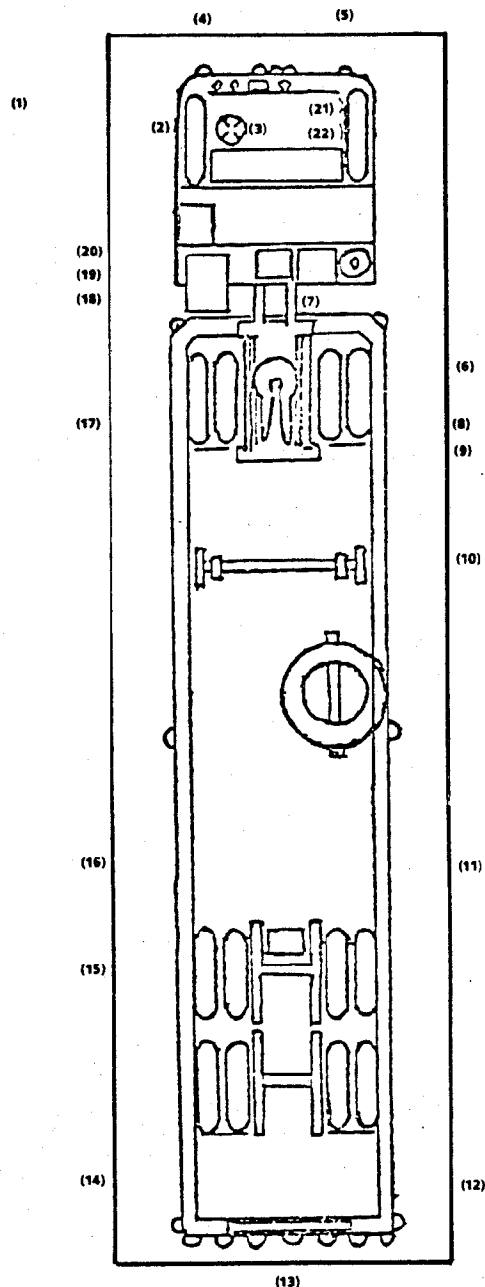
Date _____

Location _____

Truck or Tractor Unit # _____

Trailer Unit # _____

1. ☐ General condition exterior side and front tire tread inflation — leaks, weak springs, trash under unit.
2. ☐ Oil, water, belts, fuel tanks, wiring, seals, safety latches. START ENGINE.
3. ☐ Oil, amp, air gauges, pilot lights, low air warning, parking brakes, heater defroster, mirror, heater alignment control valves, air build up air locks, air condition, steering free play — less than 4", controls, clutch valve, etc. Turn on all lights including emergency flasher, safety belts and sleeper restraints.
4. ☐ Tires, wheels, lugs, hubs, cap lights, front of unit steering suspension, brake hoses and wiper blades, bumper road lights (4/32" tread required on front.)
5. ☐ Right tires, wheels, lugs, hubs, steering, suspension, brake hoses, wiper blades.
6. ☐ Tires, wheels, lugs, hubs, steering suspension adjustment.
7. ☐ Air and electrical connections and supports. 5th wheel latch. Fuel tank.
8. ☐ 5th wheel safety lock check.
9. ☐ Side marker and reflector. Cargo/load.
10. ☐ Landing gear — low range crank in support-intermediate lamp and/or reflectors, spare tires.
11. ☐ Tire, wheels, lugs, hubs, brake hoses and slack adjustment, suspension. Cargo/load.
12. ☐ Rear side lamp and reflector.
13. ☐ Rear marker and reflector, door and seal, bumper. Internal cargo.
14. ☐ Rear side lamp and reflector.
15. ☐ Tires, wheels, lugs, hubs, brake hoses, and slack adjustment, suspension (2/32" tread rear.)
16. ☐ Sliding tandem position and lock. Air tank drain. Cargo/load.
17. ☐ Tires, wheels, lugs, hubs, brake hoses and slack adjustment, suspension.
18. ☐ Marker lamps and reflectors.
19. ☐ Fuel tanks and battery.
20. ☐ Drain air tank.
21. ☐ Turn off lights unless needed, check safety equipment, wipe off all glass, have all defects corrected.
22. ☐ Set trailer brake and test 5th wheel couplin by slight pull forward.
23. ☐ Complete pre-trip report.



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TRUCK SERVICE REPORT

Date _____ Time _____ A.M. _____ P.M.

CHECK ONLY THOSE ITEMS REQUIRING SERVICE AND EXPLAIN BELOW:

Mechanic's Driver's		TRUCK OR TRACTOR NO. _____	Mechanic's Driver's		TRAILER NO. _____									
<input type="checkbox"/>	<input type="checkbox"/>	Air Compressor	<input type="checkbox"/>	<input type="checkbox"/>	Front Axle	<input type="checkbox"/>	<input type="checkbox"/>	Springs	<input type="checkbox"/>	<input type="checkbox"/>	Brake Connections	<input type="checkbox"/>	<input type="checkbox"/>	Roof
<input type="checkbox"/>	<input type="checkbox"/>	Air Hoses	<input type="checkbox"/>	<input type="checkbox"/>	Fuel Tanks	<input type="checkbox"/>	<input type="checkbox"/>	Steering	<input type="checkbox"/>	<input type="checkbox"/>	Brakes	<input type="checkbox"/>	<input type="checkbox"/>	Springs
<input type="checkbox"/>	<input type="checkbox"/>	Battery	<input type="checkbox"/>	<input type="checkbox"/>	Heater	<input type="checkbox"/>	<input type="checkbox"/>	Tachograph	<input type="checkbox"/>	<input type="checkbox"/>	Coupling Chains	<input type="checkbox"/>	<input type="checkbox"/>	Tarpaulin
<input type="checkbox"/>	<input type="checkbox"/>	Body	<input type="checkbox"/>	<input type="checkbox"/>	Horn	<input type="checkbox"/>	<input type="checkbox"/>	Tires	<input type="checkbox"/>	<input type="checkbox"/>	Coupling (King) Pin	<input type="checkbox"/>	<input type="checkbox"/>	Tires
<input type="checkbox"/>	<input type="checkbox"/>	Brake Accessories	<input type="checkbox"/>	<input type="checkbox"/>	Lights	<input type="checkbox"/>	<input type="checkbox"/>	Transmission	<input type="checkbox"/>	<input type="checkbox"/>	Doors	<input type="checkbox"/>	<input type="checkbox"/>	Wheels
<input type="checkbox"/>	<input type="checkbox"/>	Brakes	<input type="checkbox"/>	<input type="checkbox"/>	Loses Water	<input type="checkbox"/>	<input type="checkbox"/>	Wheels	<input type="checkbox"/>	<input type="checkbox"/>	Hitch	<input type="checkbox"/>	<input type="checkbox"/>	OTHER
<input type="checkbox"/>	<input type="checkbox"/>	Clutch	<input type="checkbox"/>	<input type="checkbox"/>	Mirrors	<input type="checkbox"/>	<input type="checkbox"/>	Windows	<input type="checkbox"/>	<input type="checkbox"/>	Landing Gear	<input type="checkbox"/>	<input type="checkbox"/>	(Explain
<input type="checkbox"/>	<input type="checkbox"/>	Defroster	<input type="checkbox"/>	<input type="checkbox"/>	Oil Pressure	<input type="checkbox"/>	<input type="checkbox"/>	Windshield Wiper	<input type="checkbox"/>	<input type="checkbox"/>	Lights	<input type="checkbox"/>	<input type="checkbox"/>	Below)
<input type="checkbox"/>	<input type="checkbox"/>	Door Handles	<input type="checkbox"/>	<input type="checkbox"/>	Power Lift Gate	<input type="checkbox"/>	<input type="checkbox"/>	OTHER (Explain	<input type="checkbox"/>	<input type="checkbox"/>	Power Lift Gate			
<input type="checkbox"/>	<input type="checkbox"/>	Drive Line	<input type="checkbox"/>	<input type="checkbox"/>	Radiator			Below)						
<input type="checkbox"/>	<input type="checkbox"/>	Engine	<input type="checkbox"/>	<input type="checkbox"/>	Rear End									
<input type="checkbox"/>	<input type="checkbox"/>	Fifth Wheel	<input type="checkbox"/>	<input type="checkbox"/>	Safety Equipment									

DRIVER'S EXPLANATION: _____

DRIVER _____

SUPERVISOR'S REMARKS: _____

APPROVED _____

GARAGE'S REMARKS: _____

☐ Above defects corrected ☐ Above defects need not be corrected for safe operation of vehicle

SIGNED _____

Garage Supervisor

Driver reviewing repairs _____ (Signature)

REPLY COPY — To Be Returned to Originator

DRIVER COPY

FILE COPY

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VEHICLE CONDITION REPORT

1. This form is to be completed daily. Instructions on form must be followed. The original copy of the inspection report will be retained for 3 months from the date of preparation.
2. Each driver will complete and sign a report for each day the particular vehicle is operated, identifying any defect/deficiency.
3. In two-driver operations, only one driver needs to sign the report if both agree as to the defects. If there is disagreement, state the disagreement in "remarks/other defects" and the disagreeing driver should sign in that area.
4. If there are no defects or deficiencies, driver will indicate by writing "NONE" in "remarks/other defects" and sign the report. No additional notations nor signatures are required.
5. If there are defects, the mechanic who affects the repair or qualified supervisor initials "defect corrected," signs and dates.
6. If a qualified mechanic or supervisor determines that correction is not required or necessary, then this individual initials "defect correction unnecessary," signs and dates. Note that whoever certifies "defect correction unnecessary" is the sole individual responsible for the safety of the driver, vehicle, cargo in this instance. Therefore, be sure of what you certify in any case.
7. A legible copy is placed in the cab for the next driver of the vehicle.
8. Before operating a motor vehicle, the next driver must review the legible copy of the last written Vehicle Condition Report and verify that the safety defects/unsafe condition have been corrected, then sign and date the report. The "yes" block should be checked in this case. The "no" block should be checked if defects are uncorrected.
9. If the management/mechanic certifier determines that "defect correction is unnecessary" and the new/next driver disagrees, the condition should be inspected and condition certified/corrected by a certified mechanic.
10. The legible copy of the report must accompany the vehicle during the next driver tour of duty. There is no further retention or filing requirement for the legible copy except for the next day/tour of duty the vehicle is operated.

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CHAPTER 5

BASIC DRIVER SKILLS

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BASIC DRIVER SKILLS

Introduction

The objective of the driver trainer is to insure that each individual driver candidate trained and qualified by him is a safe, professional driver. This requires a driver not only skilled in the mechanical operation of his equipment but also able to inspect equipment properly. The stage for the training and qualification of a driver candidate is set by the conduct of the driver trainer, established by the thoroughness of the pre-trip inspection, and cemented by the skills gained during basic operating techniques and obstacle course training.

This section will provide you with fundamentals to train and prepare a driver candidate for his basic responsibilities as a new driver for your company.

Conduct of the Driver Trainer in the Vehicle

Since much depends on the mannerism of the trainer while training and riding with a driver candidate or in-service driver, the following points should be considered in order to establish a professional relationship between the driver trainer and the driver candidate in an atmosphere conducive to good training and learning.

1. Be friendly and put your driver at ease.
2. Examine the driver's operators license to be sure it is current and valid for the equipment to be used.
3. Explain the purpose of the check ride and, if necessary, review procedures of the check ride.
4. Demonstrate everything you expect the driver to do during his check ride.
5. Give all instructions and directions well in advance of execution.
6. Be patient. It could be a new experience for the driver.
7. Use praise if merited.
8. Obtain driver's confidence before undertaking any corrective measures.
9. Criticize constructively when needed.
10. Instill respect for the vehicle and what it can and cannot do.
11. Ask for any questions the driver may have.
12. Check: *If the trainee hasn't learned, the trainer hasn't taught.*

Basic Operating Techniques — Guide

This is a detailed example of basic vehicle operating techniques. Basic demonstration and practice should be conducted on the off-highway training course. The driver-trainer should demonstrate the procedures for starting and operating a vehicle of the type that the trainee will be expected to drive. The trainee should be in the cab observing the trainer as he demonstrates each step. Then the trainee should get behind the wheel and go through the same steps while the trainer rides with him. Prior to driving exposure in traffic, each trainee should be given enough practice in these basics to become at ease behind the wheel and proficient in the starting, shifting and stopping routines, to the satisfaction of the trainer.

This outline is based on a diesel powered tractor-trailer unit. If other equipment is used, the outline should be modified as necessary to fit the characteristics of the vehicle operated. The pre-driving vehicle inspection should be followed prior to daily operation and after lengthy shut-down during the day.

1. Starting the engine

(check manufacturer's instructions)

A. Pre-starting procedures

1. After adjusting your seat, adjust mirrors to give driver best visibility. Mention that each driver must do this himself and should get in the habit of checking his mirror adjustment each time before he starts the engine. Proper adjustment of the mirrors will enable the driver to see the rear corners of his trailer just inside the lower corners of the mirrors. For proper adjustment, the tractor and trailer must be in a straight line. Diagrams of proper mirror adjustment follow this chapter.
2. Be sure parking brake is firmly set.
3. Check "Stop" and "Emergency Stop" controls to see that they are in operating position.
4. Press clutch pedal down only to within one inch or so of floor to disengage clutch. Pressing it down completely will burn up the clutch brake. Be sure transmission is in neutral. (Disengaging clutch reduces load on starter. Clutch should be kept depressed and disengaged until engine is running smoothly.)

B. Starting Procedure

NOTE: If starting aid such as intake air pre-heating (glow plug) or quick start vapor such as ether is used, use only as described by manufacturer or supplier.

1. Depress accelerator halfway and engage starter quickly. Release starter as soon as engine fires.
2. If engine does not start within 10-15 seconds, turn off starter and wait a few seconds before trying again. (Continuous cranking of starter may damage it.)
3. Adjust choke or prime for gasoline engine, but if engine does not start readily, look for the cause rather than continue to crank the starter motor.

C. After Starting

1. When engine starts, release accelerator and adjust throttle to run engine at approximately 1000 RPM. (This will vary with different engines.)
2. Check oil pressure gauge, and if pressure is not indicated immediately, shut off engine and seek the cause.
3. Run the engine without racing until the coolant warms. (Note: See Chapter 4 — Pre-Trip Inspection.)

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2. Putting the Vehicle into Motion

- A. Depress the clutch pedal to disengage clutch. Be careful of clutch brake.
- B. Shift transmission into lowest gear.
- C. Release parking brake.
- D. Be sure clutch is fully engaged before you step on the accelerator.
- E. With clutch fully released speed up enough to avoid lugging the engine.
- F. As vehicle gains proper RPM for that gear, release the accelerator and depress the clutch pedal at the same time, shift into neutral, advance to second speed. (Check manufacturer's instructions for *double clutching*.) Repeat this operation until vehicle is operating in the proper gear for the load and grade.
NOTE: Demonstrate *smooth acceleration*. Sudden over-acceleration is a shock to drive components.

Demonstrate shift sequence for the particular transmission or combination in this truck.
Demonstrate effect of *lugging* and *over speeding* of engine.

If required, *double clutching* is a means of bringing the speed of transmission parts into synchronization so that the shift can be made without clash.

1. Depress clutch pedal and shift to neutral. (Be careful of clutch brake.)
 2. Let up clutch and accelerate engine (for down-shift) or allow engine to slow down (upshift) until engine speed matches road speed or gear to be used.
 3. Depress clutch and complete shift. (Be careful of clutch brake.)
- Explain that with the many shift splits in today's gears it is not generally necessary to run engine up to governed speed in each gear.
 - Explain how the Tachometer registers engine speed in revolutions per minute. It is a guide for shifting and helps the driver prevent excessive engine speed by using engine as brake when descending steep grades.
 - Explain the best cruising speed and most efficient RPM according to manufacturer's instructions. This provides for fuel economy and gives the driver reserve horsepower to overcome changing wind or terrain conditions.
 - Explain the theory behind the high torque and low RPM diesel engines. (Better torque plus the wider RPM range gives better performance, better fuel economy and improved engine life.)

3. Steering

- A. Explain and demonstrate "off-track" which causes the rear wheels to turn inside the front wheels when making a turn. The longer the distance between front and rear wheels, and the sharper the turn, the greater is the "off-track." Show how driver keeps toward the

center of the road on a right turn to keep his rear end from running off the road. Show how the truck must be kept toward the outside of a left curve or turn to keep the rear end from cutting short into opposing traffic.

- B. Explain the sketch effects of understeer and oversteer on trucks and combinations. Understeer is the tendency of a truck or tractor/trailer to travel to the inside of a turn. Oversteer is the tendency to travel to the outside of a turn. Since a tractor and trailer are really two vehicles, it is possible for a tractor to have oversteer and its trailer to have understeer. Understeer/oversteer are affected by the combination effects of road surface-grade-slope, load characteristics, fifth wheel setting, etc.
- C. *Room to cut in* — Demonstrate how, because of the greater length of a tractor semi-trailer, the driver must allow considerably greater distance for cutting back into line ahead of a slower vehicle or for cutting into the curb for parking.
- D. Point out the differences in backing a non-articulating (stiff) truck with trailer and a tractor/trailer combination. In a stiff truck, you back in the direction the steering wheel is turned. The opposite is true with a tractor/trailer combination because the rear axle of the tractor acts like the front axle of the trailer.

4. General

- A. *Sluggish feeling* — Explain that because of greater size and weight, the tractor semi-trailer may seem sluggish in comparison to a straight truck or a passenger automobile. Because of this, more time and distance must be allowed for acceleration, passing and stopping. Also, when climbing grades, the vehicle loses speed and requires earlier shifting of gears. The tractor semi-trailer usually requires a lower gear than a straight truck needs for the same grade. To avoid stalls, lugging the engine and clashing gears, the driver must understand the need to shift down properly on hills and grades.
- B. *Keep her steady* — The best drivers avoid erratic movements. They anticipate the need to slow down or stop and ease off the accelerator while preparing to brake smoothly. Show how to accelerate smoothly and gradually. Show how to maintain steady progress by steady acceleration on rough pavement and by steady braking on downgrades.

5. Braking

- A. Demonstrate the use of all braking techniques.
 - Use of engine as brake on down grades.
 - Use of engine retarders.
 - Service (foot) brakes.
 - Hand brake.
 - Spring brake.
 - Tractor protection valve.
 - Tractor front wheel limiting valve.
 - Independent trailer control.

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- B. Point out technique of stopping vehicle.
 - Leave clutch engaged as long as possible.
 - Brake steadily but not sharply.
 - As vehicle comes to a stop, disengage clutch and ease brake momentarily to avoid jerk, then re-apply brake to hold vehicle in place.
- C. Remind trainee of importance of signals.
- D. Emphasize importance of downshifting on down-grade to use engine braking power and to reserve brakes for snubbing or making full stop.

6. High-torque, Low RPM Diesel Engines

- A. Demonstrate and emphasize the performance of the high torque, low RPM engines as well as the RPM range available in each gear on upshifting and downshifting on level road as well as up and down hill.
- B. Demonstrate and explain the acceleration capability and range in each gear.

7. Road Test Forms

Example forms for tractor/trailer and straight truck road tests follow this chapter. Various types of these tests for every need are available from commercial vendors.

8. Night Driving

Night driving techniques and problems should be demonstrated and explained prior to operation by the trainee. A sketch of proper headlight use follows this chapter.

9. Safe Driver Achievement Test

When the driver has been trained and meets criteria for a safe driver, he may take the safe driver achievement test which offers to you — the driver trainer — a measure of how well you have prepared your new driver for the road. The test at the end of this chapter is general in nature and will give an indication of how well-rounded your safe driver really is.

10. Professional Driver Training Courses

Courses such as the National Safety Council's Defensive Driving Course (DDC) should be considered as excellent courses for all drivers. Safe driving techniques and appreciation gained from DDC can be interwoven in all instruction and training.

The Tractor/Trailer Connection

Make sure the trainee understands each step in its proper order and its importance. Demonstrate and explain each step. Closely supervise and control each new driver until desired proficiency is gained.

A. How to Hook Up Equipment

1. Be sure the trailer is at proper height to engage the fifth wheel.

2. Block trailer wheels. Check and remove kingpin lock.
3. See that fifth wheel lock on tractor is open.
4. Back tractor close to trailer. Set emergency brake.

NOTE: Keep center of fifth wheel in line with center of nose of trailer. Fifth wheel must be tilted back.
5. Connect brake hoses and electrical wiring.
6. Get into cab, set trailer brakes and back tractor *slowly* under trailer with center of fifth wheel lined up with trailer kingpin. Continue backing until kingpin is engaged and locked. Occasionally an angle hook-up is necessary when it is impossible to back the tractor straight to the trailer. In making an angle hook-up, go through the same procedure as in making a straight hook-up. Be most careful to avoid pushing the trailer sideways.
7. Test coupling several times by easing tractor forward with trailer brakes set.
8. Get out of cab and under trailer and check coupling by looking at the fifth wheel lock to make sure the hook has engaged the kingpin. (After dark or when it is dark indoors, you should use a flashlight to be *sure*.) Secure fifth wheel lock with a safety catch or pin, as required.
9. Remove the chocks or blocks from under the trailer wheels.
10. Change tractor protective valve to emergency position to activate trailer brakes. Check by pulling gently in low first gear. This shows without uncoupling that the tractor protection valve is working properly.
11. If coupling is secure, crank up trailer supports or dolly. Be sure they are up as far as they will go. Fasten crank handle to hook.

B. How to Uncouple Equipment

1. Park unit in proper area, on firm and level ground. Tractor and trailer should be left in a straight line.
2. Set tractor parking brake. Set tractor protection valve lever in emergency position.
3. Chock or block trailer wheels.
4. Lower trailer support shoes/wheels all the way down. Make sure ground is firm enough to hold trailer; if not, place planks or similar material underneath the shoes/wheels to prevent sinking.
5. Disconnect the emergency air line from the trailer emergency coupling. Connect to dummy coupling on the rear of tractor.
6. Disconnect the service air line from the trailer service coupling and connect to dummy service coupler on rear of tractor cab.
7. Disconnect light cord from trailer and fasten to rear of tractor cab.
8. Pull the fifth wheel lock lever into open position to disengage fifth wheel jaws from the trailer kingpin.
9. Pull tractor forward slowly to permit trailer support

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wheels to take up load gradually and with a minimum amount of shock.

10. When tractor is disconnected, pull it clear of semi-trailer.

Obstacle Course Training and Driving Technique Improvement Practice

Introduction

Safe driving depends on thorough familiarity with the equipment operated and practical experience behind-the-wheel. Any training should acquaint the new driver with the equipment he will operate and provide him the practice he needs to develop the skills required to become a qualified driver. His driving skills can be rapidly developed under controlled conditions through obstacle course training such as described below. Such training can be conducted at any point where basic driving techniques permit.

This material emphasizes the fundamentals of safe driving. It can also be used as a refresher training course to help experienced drivers perfect their skills and to eliminate any bad habits they may have acquired.

In setting up this training, the following points must be considered:

1. **Vehicles** — Are there vehicles in good working order available for use by the trainees? The vehicles used for training should be the same type of safe equipment the trainee will drive when he is qualified. It also must be in a safe operating condition and have a good appearance.
2. **Driving Area** — Where will driving practice sessions be conducted?
 - A. Off-highway practice requires an area approximately 200' x 250' to accommodate large vehicles. (See diagrams and discussion of suggested layouts at the end of this section. This is a modified course, similar to those found in truck roadeos. There are others. Select the best for you and alter to fit available space.) If suitable space is not available and cannot be obtained on company property, consider using some other facility in the area, such as a fairground, airport or parking lot of a stadium, school or church.
 - B. On-highway practice. A course should be selected that gives the trainee a good sample of the road and traffic conditions he will face when he is in actual operation. The course should be at least five miles long and should include: 5 right turns, 5 left turns, 5 stop signs, 5 traffic lights, 5 grades, 5 curves and 1 or 2 railroad crossings.
 - C. Delivery practice. Train and test each driver to meet those conditions he could encounter during typical delivery services. Simulate delivery conditions.
3. **Equipment** — Is suitable material on hand to conduct the training? Following is a suggested list of basic materials that the driver-trainer will need:

A. Administration — clipboard, pencils, Road Test form in Traffic, Daily Vehicle Condition report forms.

B. Testing Devices

- Yardsticks — to measure distances in various exercises. It is helpful if the yardsticks are painted different colors — say red, white, blue — in 6-inch increments to simplify measuring.
- Tumbling Cylinder — to measure smoothness of operation. This is a 2' diameter wooden cylinder about 7" high. It is placed on end in the center of a 12" square of 1/2" plywood which rests on the floor of the truck. A 6" square of fine sandpaper in the center of the board will prevent the cylinder from sliding.
- Rubber balls and tees — to make "curb" lines for testing of steering skills. These can be made from hard rubber casters. The balls should be attached to the casters with a 2'-3' length of cord so the ball will not roll too far if bumped. (Paper cups filled with sand can be used instead of the rubber balls and tees.)
- Barrels, drums or rubber highway cones — to provide obstacles for steering tests. Cardboard or fiber drums are preferred. If steel drums are used, the tops should be wrapped with burlap or heavy paper to prevent damage to the vehicle when drums are bumped.

C. **Course Layout Materials** — to erect barricades to simulate alleys, docks, posts, etc. A complete kit using aluminum tubing and all necessary fittings may be available from your insurance company, or a similar kit can be produced locally from 1-1/2" o.d. x .058" aluminum tubing or wooden 2' x 4' boards. Seventy-eight pieces 6 ft. long and 16 pieces 8 ft. long are required, plus 106 special "split T" joints are needed. The tubing is cut into the following lengths:

42	4'4" pieces for stanchions
84	1'8" pieces for stanchion braces
12 pieces	8' long for barricade crossbars
4 pieces	8' long for curbing sections
5	10" pieces for curbing uprights
5	6" pieces for curb footings

See diagram after this section that shows how these pieces can be combined to provide the "obstacles" needed.

- Sandbags, approximately 12" x 12" filled with about 25 lbs. of sand are useful to prop up the barricades and prevent them from being accidentally tipped or blown over. But don't make the base too heavy or the tubing will be broken or badly bent when hit by a vehicle, instead of merely tipping over.
- Brightly colored flags are useful to make stanchions more visible.

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— Water-base paint can be used to help make stop lines, etc., on concrete or asphalt.

It is recommended that the various exercises that follow be taught in the same sequence as presented here, but this is not essential. If, for example, training is conducted with more than one vehicle, simultaneous practice on different phases of driving can be handled at separate locations on the driving course. However, each man should be thoroughly trained in each step of this practical course, and adequate records must be kept to measure and report progress.

Upon completion of this practical training, the new driver will be ready for his over-the-road training and final qualification tests.

Driving Skill Exercises

A number of field exercises have been developed over the years for automobile driver training courses, teen-age roadeo contests and truck roadeo competitions. The driver trainer should select those exercises which are most applicable to his operations for both training and testing.

The exercises which have persisted through many trials and course revisions are those which most closely simulate vehicle maneuvers common to everyday driving experience. These include, in the case of truck operations, parallel parking, alley dock parking, stopping and straight line steering. Weaving exercises, such as offset alley and serpentine maneuvers which require use of mirrors, assist in developing skills, especially in backing.

For purposes of illustration, five exercises are discussed separately here with suggested dimensions and necessary equipment.

Straight Line Steering

This exercise measures the knowledge of a driver as to the position of his wheels and his ability to control steering.

Evidence of steering ability or the lack of it is obtained by use of raised markers which will move upon contact by a wheel. Most practical is the use of sponge rubber balls mounted on tees.

The driver is required to run the right, or blind-side, wheels of his vehicle between pairs of balls located at intervals of 20 or 25 feet between the pairs, depending upon the layout. The critical pair is in the center where the spacing between them is the width of the truck's tire track (or rear-duals) plus 4 inches. For a variation of the test, a driver may be required to back through the balls.

Demerits may be assessed for each instance of touching or running over a ball or for passing completely around any set of balls.

Serpentine

Many variations of weaving-maneuver exercises are possible. Perhaps the simplest to erect is formed with three barrels in line about 30 feet apart.

Measuring the driver's proficiency in steering and in gauging clearances by use of side mirrors is the purpose of this exercise.

Drivers are required to drive forward and then back through in a continuous motion. Demerits may be assessed for each instance of stopping, hitting a barrel or stanchion or crossing side limit lines.

Diminishing Clearance and Stop Line

This exercise provides two tests of a driver's ability. First, it provides some measure of a driver's knowledge of the lateral limits of width of his vehicle, particularly in a tight spot. Second, it measures the driver's knowledge of the frontal limits of his vehicle and his depth perception.

To complete the exercise, a driver must negotiate the 75 foot long clearance alley diminishing to a width 2 inches wider than his vehicle, without striking the side stanchions. He then proceeds in a continuous motion to the stop line, decelerating smoothly so as to stop with the front bumper centered over the line.

The exercise may be scored by charging one demerit for each instance of striking stanchions and for each instance of stopping more than one time in the entire maneuver. Position scoring at the stop line can be based on 6 inch intervals or zones. When a driver goes beyond the stop line, he should be given maximum demerits to emphasize the importance of controlled braking. In such cases the stop line could be referred to as a pedestrian or another vehicle ahead.

Parallel Parking

Perhaps the most practical of all exercises, the parallel parking layout determines a driver's ability to park parallel to the curb in a space 5 feet longer than his truck or trailer. Considerable skill in use of the accelerator, brake and mirrors is needed.

The driver is required to back his vehicle into a stall from the blind side without striking the end barricades or curb. Scoring is usually based on demerits for striking barricades and curb, the number of pull-ups required to complete the maneuver and the final positioning of the vehicle relative to the curb. Curb position scoring can be determined by use of 6 inch intervals, or zones, measured from the tires to the curb.

Alley Dock

This exercise simulates a simple truck bay at a loading dock. It is a valuable measure of the driver's depth perception and ability to utilize mirrors in backing.

The driver is normally required to back from the blind side into the dock, which is about 1 foot wider than his vehicle, and stop within a given distance of the rear barricade or deck edge, with 6 inches as the usual allowable limit. A dock area depth of 20 feet is sufficient for test purposes. Demerit scoring is based on the number of pull-ups required and the number of times the barricades are hit, side or rear. Final positioning may be scored to 6 inch intervals or zones taken from the rear barricades to the tailgate.

Scoring

Keeping scores on exercises is entirely optional. To some degree, a score measures the proficiency of a driver's perfor-

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mance, but it is not necessarily a reliable yardstick. Some drivers perform a given exercise with great difficulty owing to nervous tension caused by test conditions or any number of other emotional or psychophysical factors. The important effect in obstacle testing is that the driver executes a defined skill exercise which should emphasize to him the importance of controlled steering, coordinated shifting and braking, proper use of accessories such as mirrors, and the operational and design limits of his vehicle.

Suggestions for scoring demerits were made under the various exercises. If scoring offers to be of advantage in screening drivers, a simple check sheet can be used, similar to that below. Any arbitrary total point score can be established for each exercise, from which demerits may be subtracted for a net earned score.

Following completion of the obstacle course exercises, brief the drivers on the performance.

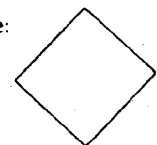
SUGGESTED SCORING SHEET

OBSTACLE COURSE			
DRIVER: _____			
EXERCISE	NUMBER DEMERITS	ZONE NUMBER	TOTAL DEMERITS
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
GRAND TOTAL DEMERITS			=====
Total Allowable Score		_____	
Less Grand Total Demerits		_____	
Net Earned Score		_____	
Note: Each demerit equals 5 points Zone 1.0 to 6 inches equals 0 demerits Zone 2.6 to 12 inches equals 5 demerits Zone 3.12 to 18 inches equals 15 demerits Zone 4. over 18 inches equals 20 demerits			

SAFE DRIVER ACHIEVEMENT TEST

The multiple choice questions which follow are to test your general knowledge of safe driving. Your score will be the number of right answers you choose, so answer every question. There is only one best answer for each question. Clearly mark the letter of the best answer on a separate answer sheet.

- Controlling accidents is primarily the job of:
 - the police
 - the Legislature
 - the insurance companies
 - the drivers
- The major cause of fatal accidents is:
 - mechanical failure
 - road conditions
 - human error
 - weather conditions
- In order to drive safely you must:
 - operate the vehicle defensively
 - be flexible in driving situations
 - have your eyes tested regularly
 - keep your vehicle in good running order
- Besides knowing how to operate a motor vehicle, driving requires all the following except:
 - knowing the local traffic laws
 - knowing the name of your insurance company
 - having a valid driver's license
 - having a properly registered vehicle
- In driving "providing a margin of safety" means:
 - willingness to yield the right of way
 - driving 5 m.p.h. below the speed limit
 - demanding no more than your legal rights
 - allowing sufficient following distances
- About what percentage of motor vehicle fatalities in rural areas are pedestrians?
 - 10%
 - 20%
 - 30%
 - 40%
- A driver cannot drive safely:
 - at dawn or dusk
 - in a snowstorm
 - after drinking two beers
 - in an old car
- Defensive driving is:
 - avoiding involvement in accidents by anticipating accident-producing situations
 - avoiding traffic violations
 - driving at moderate speeds
 - driving between rush hours
- This shape of sign might indicate:
 - school ahead
 - speed limit
 - one-way street
 - no parking
- If pedestrian is crossing the street when the traffic light ahead of you turns green, you must:
 - move ahead so that you will not delay traffic
 - wait until the pedestrian has crossed in front of you
 - wait until the pedestrian has reached the sidewalk
 - blow your horn to warn the pedestrian



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11. Markings are used primarily to:
 - (a) direct the flow of traffic
 - (b) prevent passing maneuvers
 - (c) indicate the middle of the road
 - (d) indicate curves
12. Which one of these four rules for better seeing habits is incorrectly stated:
 - (a) aim high
 - (b) get the big picture
 - (c) concentrate on the traffic ahead
 - (d) leave yourself an "out"
13. When you extend your arm straight out of the driver's window, you are signalling that you are about to:
 - (a) stop
 - (b) turn left
 - (c) turn right
 - (d) back-up
14. At unposted intersections, which of these has the right of way:
 - (a) emergency vehicle on call
 - (b) tow truck
 - (c) snow plow
 - (d) school bus
15. Two "Stop" streets intersect at right angles. "A" and "B" reach the intersection at the same time. "A" is driving west. "B" is driving north.
 - (a) "A" stops. "B" continues
 - (b) "B" stops. "A" continues
 - (c) Both stop. "B" yields
 - (d) Both stop. "A" yields
16. Reaction distance is the distance a vehicle travels between the time the:
 - (a) brakes are applied and the vehicle stops
 - (b) danger is seen and the brakes are applied
 - (c) danger arises and the danger is seen
 - (d) danger arises and the vehicle stops
17. It is a clear day. The road is dry. You are driving at 50 m.p.h. How many car lengths should you allow between your vehicle and the vehicle immediately ahead?
 - (a) 5
 - (b) 10
 - (c) 15
 - (d) 20
18. It is a rainy day. You are driving at 40 m.p.h. How many car lengths should you allow between your vehicle and the vehicle immediately ahead?
 - (a) 4
 - (b) at least 8
 - (c) 12
 - (d) 16
19. It is cold and has been snowing for some time. You are driving at 30 m.p.h. How many car lengths should you allow between your vehicle and the vehicle immediately ahead?
 - (a) 3
 - (b) at least 6
 - (c) 9
 - (d) 12
20. The traffic maneuver requiring the most critical degree of judgement is:
 - (a) entering a limited access highway
 - (b) backing out of a blind driveway
 - (c) making a left turn
 - (d) overtaking and passing another vehicle
21. The only time you may pass on the right is when:
 - (a) the driver ahead persists in driving in the left lane
 - (b) traffic in the right lane is moving faster
 - (c) the driver ahead is turning left
 - (d) the right lane is clear of traffic
22. You are approaching an intersection where the green light has just turned in your favor. Another driver is approaching the intersection rapidly from your right. Should you:
 - (a) speed up to get across the intersection safely, first
 - (b) blow your horn to warn other driver
 - (c) slow up and be prepared to stop if necessary
 - (d) continue on the green light at your same speed
23. If you double your speed, the force of impact is multiplied by:
 - (a) 2
 - (b) 4
 - (c) 8
 - (d) 16
24. Before you back:
 - (a) walk around your vehicle and look in your rearview mirror
 - (b) look in your rearview mirror
 - (c) blow your horn
 - (d) all of the above
25. You should lower your headlights when approaching another vehicle within:
 - (a) 0-500 feet
 - (b) 500-1000 feet
 - (c) 1000-1500 feet
 - (d) 1500-2000 feet

SAFE DRIVER ACHIEVEMENT TEST

- | | |
|-------|-------|
| 1. d | 14. a |
| 2. c | 15. c |
| 3. a | 16. b |
| 4. b | 17. a |
| 5. d | 18. b |
| 6. b | 19. b |
| 7. c | 20. c |
| 8. a | 21. c |
| 9. a | 22. c |
| 10. b | 23. c |
| 11. a | 24. d |
| 12. c | 25. b |
| 13. b | |

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ROAD TEST — TRACTOR TRAILER

DRIVER'S NAME _____

TERMINAL _____ DATE _____

ITEMS TO CHECK

	Excellent	Average	Below Avg.	Poor
PRE-TRIP PROCEDURES				
Pre-trip inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Start & warm up procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MAKING UP UNIT				
Hooking up tractor trailer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unhooks & drops trailer properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blocks trailer: hook up, unhooking, unloading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DRIVING HABITS				
Looks behind & signals before pulling from curb ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintains a safe stopping distance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Varies speed to meet traffic conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approaches intersections cautiously	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yields to pedestrians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Travels more slowly in curb lane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Applies brakes smoothly (avoids fanning)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes smooth stops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeps both hands on wheel when not shifting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obeys speed limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PASSING HABITS				
Drives in right lane except to pass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passes others safely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passes parked vehicles safely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allows adequate room for complete pass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
URNS				
Signals & assumes proper lane for turn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Completes turn properly & smoothly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHIFTING OF GEARS & USE OF CLUTCH				
Starts in low gear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper use of clutch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper shifting up & down range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper engine RPM & torque maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMUNICATES WITH OTHERS				
Use of turn signals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taps horn to alert others of his moves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes eye contact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TOTAL POINTS: POOR 40-99 BELOW AVG. 100-119 AVERAGE 120-139 EXCELLENT 140-160

VEHICLE # _____ MILES COVERED _____ TIME _____

ITEMS TO CHECK

	Excellent	Average	Below Avg.	Poor
BACKING				
Avoids unnecessary backing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dismounts to check safety to rear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uses mirrors properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backs properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PARKING				
Stops off traveled portion of highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Parks without hitting curb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sets emergency brake & secures vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On hills, turns wheels into curb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shuts off engine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SEEING HABITS				
Reads traffic lights well in advance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaluates traffic pattern early	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Looks for cross traffic, starts on green light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use of mirrors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GENERAL KNOWLEDGE				
Appearance of driver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of DOT & Co. safety rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of emergency procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepts, & tries to correct poor habits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No. Excellent _____ @ 4 points _____				
No. Average _____ @ 3 points _____				
No. Below Avg. _____ @ 2 points _____				
No. Poor _____ @ 1 point _____				
TOTAL SCORE _____				
EXAMINER'S SIGNATURE _____				

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ROAD TEST — STRAIGHT TRUCK

DRIVER'S NAME _____

TERMINAL _____ DATE _____

ITEMS TO CHECK

PRE-TRIP PROCEDURES

Pre-trip inspection ☐ ☐ ☐ ☐

Start & warm up procedure ☐ ☐ ☐ ☐

DRIVING HABITS

Looks behind & signals before pulling from curb ☐ ☐ ☐ ☐

Maintains a safe stopping distance ☐ ☐ ☐ ☐

Varies speed to meet traffic conditions ☐ ☐ ☐ ☐

Approaches intersections cautiously ☐ ☐ ☐ ☐

Yields to pedestrians ☐ ☐ ☐ ☐

Travels more slowly in curb lane ☐ ☐ ☐ ☐

Applies brakes smoothly ☐ ☐ ☐ ☐

Makes smooth stops ☐ ☐ ☐ ☐

Keeps both hands on wheel when not shifting ☐ ☐ ☐ ☐

Obeys speed limits ☐ ☐ ☐ ☐

PASSING HABITS

Drives in right lane except to pass ☐ ☐ ☐ ☐

Passes others safely ☐ ☐ ☐ ☐

Passes parked cars safely ☐ ☐ ☐ ☐

Allows adequate room to complete pass ☐ ☐ ☐ ☐

TURNS

Signals & assumes proper lane for turn ☐ ☐ ☐ ☐

Completes turn properly & smoothly ☐ ☐ ☐ ☐

SHIFTING OF GEARS & USE OF CLUTCH

Starts in low gear ☐ ☐ ☐ ☐

Proper use of clutch ☐ ☐ ☐ ☐

Proper shifting up & down range ☐ ☐ ☐ ☐

Proper engine RPM & torque ☐ ☐ ☐ ☐

COMMUNICATES WITH OTHERS

Use of turn signals ☐ ☐ ☐ ☐

Taps horn to alert others of his moves ☐ ☐ ☐ ☐

Makes eye contact ☐ ☐ ☐ ☐

VEHICLE # _____ MILES COVERED _____ TIME _____

ITEMS TO CHECK

BACKING

Avoids unnecessary backing ☐ ☐ ☐ ☐

Dismounts to check safety to rear ☐ ☐ ☐ ☐

Uses mirror properly ☐ ☐ ☐ ☐

Backs properly ☐ ☐ ☐ ☐

PARKING

Stops off traveled portion of roadway ☐ ☐ ☐ ☐

Parks without hitting curb ☐ ☐ ☐ ☐

Sets emergency brake & secures vehicle ☐ ☐ ☐ ☐

On hills, turns wheels into curb ☐ ☐ ☐ ☐

Keeps doors or gates closed & locked ☐ ☐ ☐ ☐

Shuts off engine ☐ ☐ ☐ ☐

SEEING HABITS

Reads traffic lights well in advance ☐ ☐ ☐ ☐

Evaluates traffic pattern early ☐ ☐ ☐ ☐

Looks for cross traffic, starts on green light ☐ ☐ ☐ ☐

Use of mirrors ☐ ☐ ☐ ☐

GENERAL KNOWLEDGE

Appearance of driver ☐ ☐ ☐ ☐

Knowledge of DOT & Co. safety rules ☐ ☐ ☐ ☐

Knowledge of emergency procedures ☐ ☐ ☐ ☐

Listens to instructions attentively ☐ ☐ ☐ ☐

Accepts, & tries to correct poor habits ☐ ☐ ☐ ☐

No. Excellent @ 4 points _____

No. Average @ 3 points _____

No. Below Avg. @ 2 points _____

No. Poor @ 1 point _____

TOTAL SCORE _____

EXAMINER'S SIGNATURE _____

TOTAL POINTS: POOR 40-99 BELOW AVG. 100-119 AVERAGE 120-139 EXCELLENT 140-160

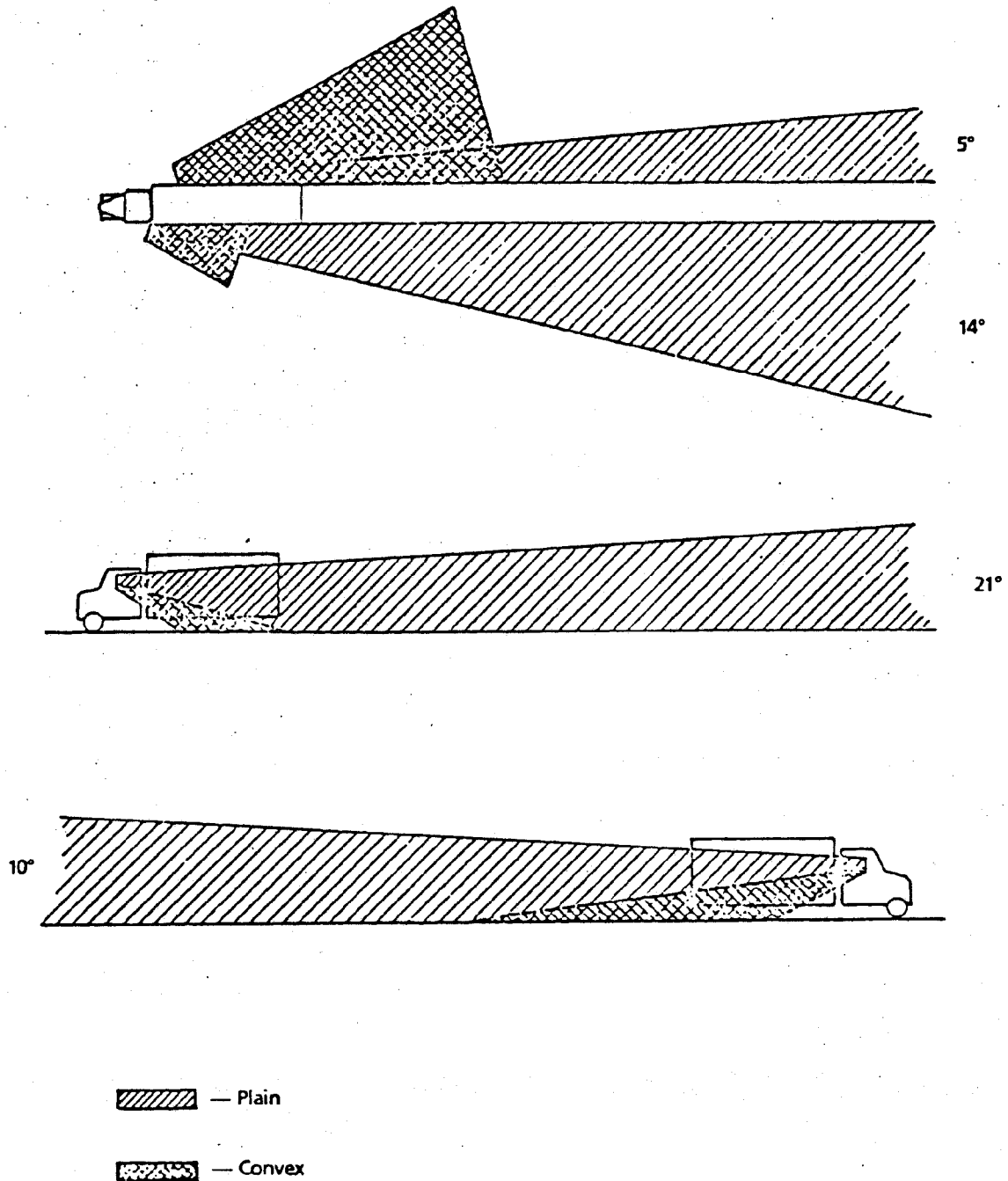
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PROPER MIRROR SETTINGS

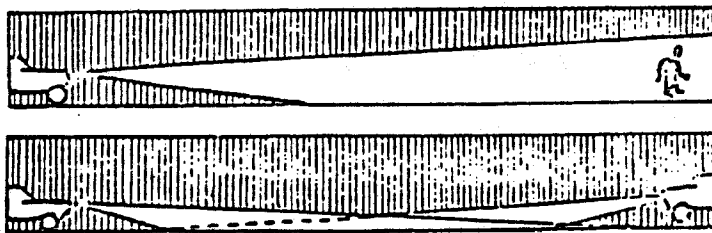
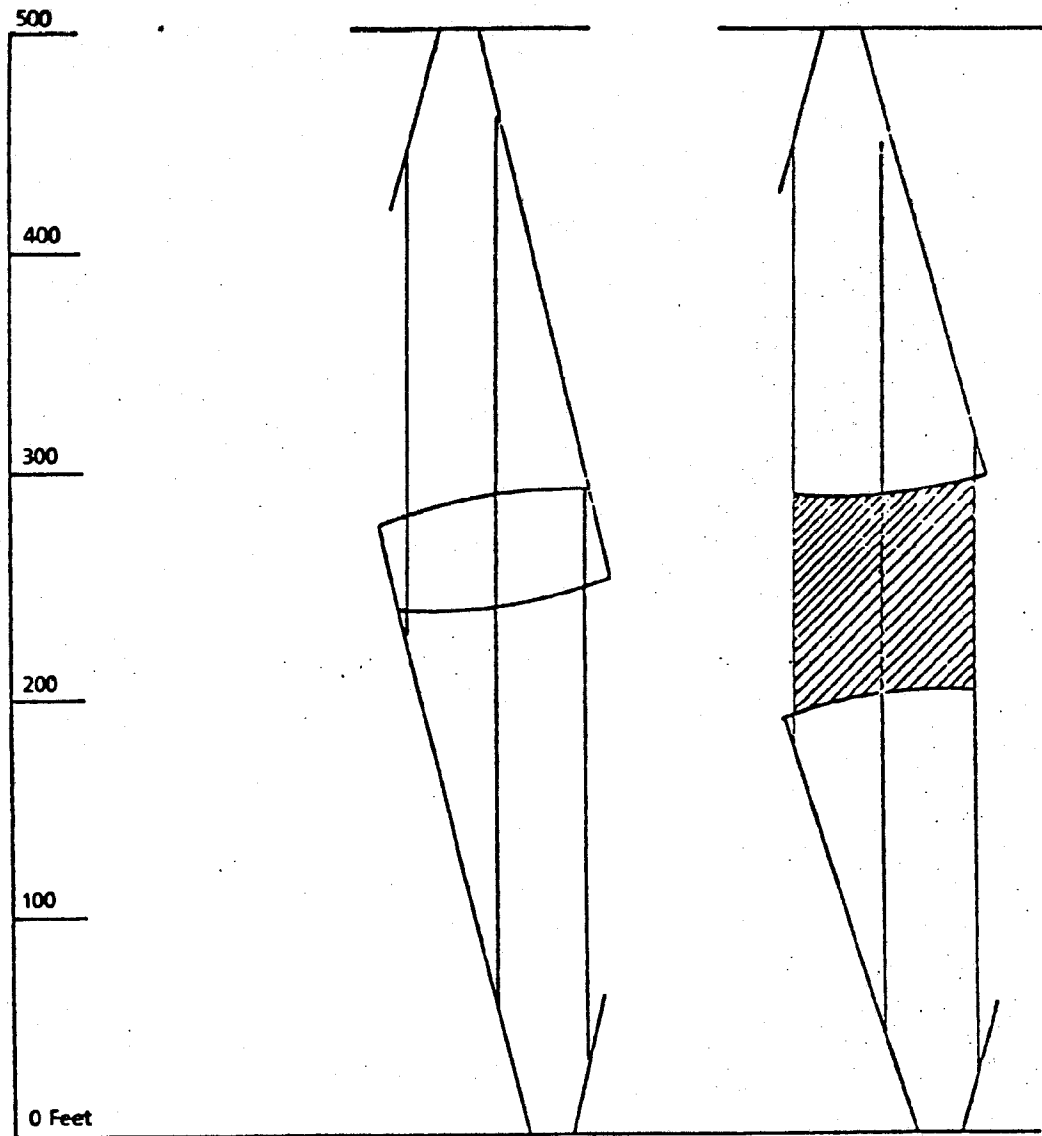


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PROPER USE OF HEADLIGHTS



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CHAPTER 6

SAFE DRIVING — A FUNDAMENTAL ATTITUDE

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SAFE DRIVING — A FUNDAMENTAL ATTITUDE

(This material might be duplicated and used as a hand-out to trainees)

We all know that driving consists of guiding a vehicle safely and efficiently along a path selected by the driver. Learning the basic skills of vehicle control is very important in driving, but *our* goal is to be more than a vehicle operator. We want to become totally professional drivers.

A professional driver is one who can drive from one place to another in a safe and efficient manner. The efficient driver has the ability to complete his trip with minimum effort and time. The safe driver is one who can complete his trip without crashing into something. He has the ability to avoid dangers or hazards. A professional driver must be able to see objects and situations in and around his intended path of travel. He must also be able to interpret those situations and determine the nature and seriousness of the hazards he will have to deal with.

Who will benefit from your practicing the fundamentals of safe driving?

First, you and your family will benefit. You don't want to injure yourself or someone else, and your family doesn't want you to, either. You're important to your family and they want you safe, healthy and working.

Secondly, the general public will benefit. We don't want you to endanger the lives of the public by careless driving. We must share the road with other drivers and be courteous to them.

Third, the company will benefit. Reducing accidents will reduce needless costs and insure that we have a company to work for in the future. Remember, you represent the company when you're out in their truck. Everything you do while driving reflects on the company. You either help build goodwill or you damage our public relations.

What is Defensive Driving? Definition:

Defensive Driving is the technique of avoiding dangerous situations by anticipating the hazards caused by other drivers, pedestrians or weather and road conditions, and taking the necessary action to prevent an accident.

The key word is "anticipate." By this we mean to expect or look ahead for hazards. Training is required to acquire the skill of anticipating the hazards, recognizing them as they develop and taking the necessary action.

To develop a fundamental attitude which will apply to every situation, various "Driving Systems" have been outlined. These include basic skills necessary for defensive driving. Following are two examples.

The system known as the "Smith System" — the Five Keys to Space Cushion Driving" was developed by Harold L. Smith, a driver training consultant. His system is concerned with the placement of the vehicle in traffic, with an alert use of the eyes, with the automatic assessment of all driving situations before or as they arise — not afterwards, when panic actions must be taken.

Here are the five keys:

1. AIM HIGH IN STEERING

Your eyes should be leading your vehicle down the roadway at least 8 to 12 seconds ahead at city speeds. You don't look at the toes of your shoes when you walk. You usually look about 25 feet ahead of your walking path. You must have a steering path picked out several hundred feet ahead when driving a motor vehicle at 25 MPH. **DO NOT BE GUILTY OF LOW AIM STEERING. AIM HIGH IN STEERING!**

2. GET THE BIG PICTURE

Use your eyes to GET THE BIG PICTURE. Getting the big picture means seeing everything related to your total traffic picture. In the city, watch all objects at least a block ahead. Out of the city, watch at least half a mile ahead.

Few people realize that we see clearly only through a small cone of central eyesight. When you look 100 feet ahead, all you see with this central eyesight is an area 5 feet in width; at 1,000 feet, it is only 52 feet wide. Most objects are first detected by your fringe vision — upper, lower or side sight — which acts as a magnet for central vision.

3. KEEP YOUR EYES MOVING

That's the only way to get the big picture. Staring at one object prevents you from seeing the big picture. Move your eyes at least every two seconds and check your mirrors at least every five seconds. The Keep Your Eyes Moving rule simply means that as long as your wheels are moving, so should your eyes be moving. When your eyes stop moving and the vehicle continues to move, there are moments in which you are approaching disaster.

4. LEAVE YOURSELF AN OUT

Watch for your way out of an emergency situation. Keep a safe distance behind the vehicle ahead and allow space on one or both sides to go to in case it is needed to avoid a collision.

Another way of expressing it is not to let your wheels get ahead of your eyes. An accident is almost always an unexpected event. It is true that if you are expecting an accident, you will never have one.

5. MAKE SURE OTHERS SEE YOU

Use turn signals, lights and horn to be sure all other drivers see what you are doing. Don't perform a maneuver unless you are 100% certain it is safe.

At the same time we are improving our seeing habits, we should learn WHAT to search for and identify. When you get right down to it, you cannot avoid what you haven't found and identified. The following is one system used by Liberty Mutual Insurance Company. Smith's system and Liberty Mutual's system, as well as others, provide a guide to approach driving with the proper attitude — then NO hazardous condition will be a surprise.

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1. EXPAND YOUR LOOK-AHEAD CAPACITY

The future is influenced by what is happening right now, up ahead. Have foresight. Know that present action can eliminate future trouble and accidents. This is the art of good timing. You can tell that a driver is not using this look-ahead capacity when he speeds up to a red light and has to screech to a halt to avoid rear-ending the vehicle ahead.

2. SIZE UP THE WHOLE SCENE

The more traffic and road conditions you recognize, the less chance there is of making the wrong decision. The conditions in front, to the side and to the rear may all affect the situation in a few seconds which may become an accident if one is not practicing Defensive Driving.

You're not able to SIZE UP THE WHOLE SCENE when you follow too closely, when you find yourself having to make sudden stops or hard turns, or when you keep running into traffic delays. So, eliminate the need for split-second decisions. Keep yourself constantly informed by sizing up the whole scene.

3. SIGNAL YOUR INTENTIONS EARLY

Even good decisions are not fool-proof if we don't let others know our intentions about the actions we've planned to take. To insure success of the action, the decisions many times require communication with others — the driver ahead — the driver behind — an unwary pedestrian — a child playing in the street — an oncoming cyclist. Signaling changes in movement should be automatic. Develop it into such a habit pattern that you would signal if you were on a deserted highway. If you don't develop this into such a habit, you may forget to signal when you need it most, when you are busy with other problems in heavy traffic.

4. PLAN AN ESCAPE ROUTE

Making a decision that leaves you without an alternative is many times like picking your own poison. It's pretty hard to choose between two consequences when you don't want either one of them to happen. But it's easy to be quick and decisive when a planned escape path, a saving decision, is open to you. Some preventive actions are: KEEP A STOPPING SPACE — BE PREPARED TO YIELD — STAY OUT OF TAILGATING TRAPS — TIME YOUR PASSING MOVES.

5. TAKE DECISIVE ACTION

This is the pay-off point — the action taken as the result of recognizing all the conditions through the LOOK-AHEAD CAPACITY and SIZING UP THE WHOLE SCENE and having A PLAN FOR AN ESCAPE ROUTE.

If you follow this driving pattern you improve your judgment. When you practice it on the road, you improve your skill. When you conscientiously follow it, you shape your ATTITUDE and drive maturely and safely.

When you think about all the traffic controls, roadway characteristics and other drivers, vehicles and pedestrians

you encounter in a day, very few of these will cause you any real problems if you practice defensive driving. What we must do is collect evidence for judging the importance of a hazard. We need to use a system so we can pick out the most important hazards for us and then deal with them. One successful and easy system is called the IPDA.

We must first *Identify* the hazard.

We must *Predict* what the hazard will do.

We must *Decide* what action we must take.

We must *Act* on our decision.

One way to avoid collisions is to prevent ourselves from being surprised. Surprise is involved in practically every collision. Drivers who anticipate trouble early enough stay out of collisions. They give themselves enough time, precious time, to make proper adjustments. The answer to being surprised is to *identify* hazards early enough and *predict* what they will do and how they will affect you.

After you have predicted what will happen, you can then *decide* what steps you will need to take to avoid the hazard and *act* on your decision.

Up to now you may have found some of these ideas and guides for evaluating hazards interesting, but you may also be thinking to yourself, "Who in the world would have time for all that while driving? That's a lot to do!" And you are right! But let's not forget the power of the human brain.

The human brain is like a giant computer. With practice, some of these things may take only a fraction of a second. But our brain, like a computer, is of little value if it hasn't been fed the right information.

At one time or another, you have probably worked a puzzle. After you have once solved a puzzle, what happens the next time you try it? It then becomes very easy and takes just a fraction of the time you first needed. This is because you can quickly identify the clues and know what to expect. You no longer have to rely on trial and error methods.

Another interesting thing happens. Other similar puzzles become easier to work the first time you try them.

This is also true of traffic situations. Once you identify and predict traffic situations, it actually becomes easy. With practice you will be able to handle the common situations almost automatically. This will give you more time for dealing with the complex or unusual traffic situations.

All accidents can be blamed on one of three things: human failures, mechanical failures or an act of God. An act of God accounts for less than 1% of all accidents. This would be an accident such as a sign blowing over onto a truck.

Mechanical failures cause as little as 3% of all accidents, such as loss of steering or brake failures. That leaves the rest of the accidents, 96%, due to human failures. These include mental or physical disabilities or lack of driving skills. We expect all of our drivers to be mentally and physically fit, and when you have finished training you will have the driving knowledge and skill necessary to drive defensively.

But what about the other drivers on the road — drivers you will meet? Many of them lack one or more of the three essentials of good driving — they are unfit mentally, physically or in lack of adequate driving knowledge. Occasionally

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they lack all three! That's why Defensive Driving is so important. By *anticipating* the hazards caused by these unskilled or incapable drivers, you can take the necessary action to avoid an accident.

We have discussed good seeing habits and how to anticipate and identify hazards, then predict what they will do and make a decision based on our prediction as to what action we must take to avoid the hazard. Let's now take a look at some faulty seeing habits that can lead to accidents. It is very interesting to note that most accidents happen in clear, dry weather, on straight roads, in light traffic, to sober, well-intentioned drivers who have excellent past driving records. So, what happened? They were distracted, and the distractions caused them to fail to see the dangerous situation that developed into an accident.

Distractions fall into five groups:

Route problems: Distracted by looking for a road sign or street address.

Mental disturbances: Such as day dreaming or letting irritations occupy our minds so that even if our eyes are taking in the pictures, our minds aren't paying attention and receiving the message.

Scenery: Distracted by a view that captures our attention and holds our eyes too long, such as a fire, pretty girl or another accident.

In the vehicle: Distractions within your own car or cab, like a bee or staring at a fuel gauge too long at the wrong time.

Unfamiliar driving tasks: Distractions caused by a new expressway, icy roads or different traffic signals in a strange state.

Knowing what these distractions might be will help us avoid them. But we also have to learn how to use good seeing habits and practice them constantly so we can avoid getting caught by distractions and can anticipate hazards.

SPECIFIC DRIVER RESPONSIBILITIES

We have learned the importance of anticipating dangerous traffic situations and taking action to avoid them. We have also learned that by keeping our eyes moving and getting *the entire scene* we will see an early warning of almost every hazard.

While we are reading and interpreting the messages our mind is receiving, we must also be sending out our own signals so that others are told what we are planning to do. This is the concept of *Communications*. Whenever our plan of action involves a change of direction or speed, other drivers and pedestrians must be warned. Others cannot read our minds.

Signs, Signals and Pavement Markings

The familiar signs, signals and markings along our streets and highways carry a message for us. These are messages that are easy to read. Used properly they can be a helpful aid. (Chapter 8 — Rules and Regulation — details most of the present-day markings and the regulations related to them.)

Traffic signs: Most states have adopted standard shapes, colors and symbols so that we can understand their impor-

tant messages in a quick glance. These signs are placed by traffic safety engineers. They use the signs to communicate a warning to you. By recognizing these signs you'll be prepared to meet the hazardous condition indicated ahead. Remember that these signs can only *assist* you. REMEMBER — The presence or absence of a sign in no way relieves you of your responsibility for safe driving, but watching signs will make it easier for you to live up to your responsibility.

Traffic signals: Traffic signals are not as standardized as other signs. You may see them at corners or hung over intersections. Some of them will have turn arrows or delays that others don't have. But in all of them, red means stop, yellow means caution and green means go, if clear. Traffic signals must always be obeyed unless a traffic officer has taken control of an intersection.

Pavement markings: The striping of roads and streets has not been fully standardized, either, so you must become familiar with the markings in any area through which you drive. Because highway authorities recognize that differences in markings can cause confusion, you will usually see explanatory signs. Be sure you *read and heed* the sign message.

Action Signals

Signs, signals and markings give us a steady flow of incoming messages. There are other signals that we also use while driving. These are *action signals*.

Turn indicators (and, infrequently, hand signals) are an important part of communicating intentions. This is good communication. We can't talk to other motorists, but a flick of a switch shows them our interest. If possible, we can reinforce the message with a proper hand signal. Observe the turn signals of other motorists and learn what they intend to do. Signals should be given 200-300 feet in advance.

There are some other ways to communicate, too. *Stop signals* are essential to safe driving. By touching your brake you can flash your stop light as an early warning of planned stopping or slowing. If possible, you should also use a hand signal to warn other motorists that you are about to stop.

The *horn* is still another method of communicating. It can be used to warn other motorists or pedestrians of your presence and to get their attention. Be careful not to startle others with your horn as this could be dangerous. But in a passing situation, for example, you should use the horn to catch the attention of the motorist ahead so that he will be aware you are pulling out to pass.

The *position of our vehicle* can be a way to communicate our intention. If we are going to turn left, for example, we should be well positioned in the left lane well ahead of the turn. And by watching how other motorists are positioning themselves, we can anticipate their actions.

Avoiding Accidents

With all these different ways to communicate, accidents should be almost totally eliminated — but they are not. Every day, all across the nation, there are thousands of accidents. Are these "unavoidable" accidents? The experts say *no, definitely no*.

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Most accidents are *collisions* and most collisions result from an error or failure on the part of the drivers involved. This indicates that a time sequence is involved where a situation gradually develops so that the accident becomes inevitable. If the situation could have been anticipated, or if proper action could have prevented the collision, the accident should properly be called "*avoidable*."

Let's look at an example. Let's say that you are driving down a highway approaching an intersection. You see a driver on the cross road approaching the same intersection. He is supposed to stop but he doesn't seem to be slowing down. If you reach the intersection at the same time, you will have a collision. Would you call it "unavoidable" just because you assumed he would stop — or if you had failed to see him? You might want to, but you would know that it was really avoidable if you had taken early action by anticipating the hazard and predicting what he would do.

An expert driver notices that oncoming vehicles are using their windshield wipers. What does this tell him? He knows there is or has been a shower just ahead. The highway could be slick. He slows down accordingly and avoids the "unavoidable" skid that might otherwise occur.

The expert driver has learned from experience to avoid the unavoidable; this involves using his eyes. The expert driver learns to see important clues and tip-offs that give him information an amateur doesn't see.

One danger we haven't touched on is the danger of *false signal*. A most common example is a turn indicator flashing on a car that has no intention of making a turn, or a hand signal that isn't a hand signal, but just a careless motorist waving his arm or resting it in the breeze. By observing the movement of the vehicle, any steering movement can be detected. Some motorists, for example, will veer in the direction opposite to that in which they are planning to turn. This may be a leftover from the days when a car didn't have the short steering radius most common today. But even in this example you have an early warning if you are observant.

Driver Responsibilities

Every professional driver accepts the responsibility of his vehicle, cargo and driving. Here are some rules to help prepare for safe operation.

1. Know your equipment and pre-trip it thoroughly. Also, throughout the day, check your unit for defects to help insure safe operation. At completion of work day, prepare written vehicle condition report.
2. Know and be familiar with local, State and Federal regulations which apply to your operation.
3. Keep yourself physically fit and mentally alert. Get plenty of rest prior to your tour of duty. Do not use nor have in your possession narcotics, alcohol or any stimulants or depressing drugs.
4. Always have your driver's license and DOT physical card in your possession and be sure that all permits, registration plates and placards that may be required are displayed.
5. Keep windshields, rear view mirrors, marker lenses and

lights clean. Check your vehicle for defects in steering gear, tires, brakes, lights, reflectors, windshield wipers and horn. Be sure your vehicle is equipped with safety devices as required: fire extinguishers, reflector triangles and pertinent company equipment.

6. Do not carry unauthorized passengers.
7. Permit an engine to warm up before moving a vehicle. Do not race a cold engine. Also, allow an engine to idle before shutting off to permit slow cooling.

Driving with Courtesy

Courtesy is being considerate of and to others. Any driver who is truly courteous does himself a favor by lessening the likelihood of being in an accident situation.

Following are a few rules of courtesy to help keep you from provoking situations in which an accident might occur while driving.

1. Give proper signals well in advance of changing lanes or turning so other drivers have advance notice of your intentions and can allow for them. Be sure to turn off signals after they have served their purpose.
2. Pass or turn in such a manner that other drivers are not crowded. Use rear view mirrors well in advance of such moves.
3. Be patient and be sure you have plenty of room before pulling out from intersection.
4. Give the right-of-way cheerfully when the other driver seems uncertain or appears intent on taking it.
5. Give the other drivers plenty of room to pass.
6. Watch out for pedestrians, particularly children and the elderly, in crosswalks and during traffic light changes. When driving in cities, proceed in areas of parked cars as if you expect a child to dart out from between them at any time.
7. Keep your temper, stay relaxed and don't let yourself get upset by "the other guy." If the "other guy" is intent on taking the road, let him have the road. It will still be there after he is gone.

Additional Driver Responsibilities

1. When beginning a shift, even though the last driver has checked the truck on the finish of his run, you must pre-trip it. *The driver on duty is always responsible for the condition of the equipment when it leaves the terminal.*
2. Drivers shall report to their supervisors, in writing, all defects in equipment. It is always the responsibility of the professional driver to insure and maintain the safe operation of his unit.

Night Driving

When training for night driving, it is very important to point out the additional safeguards that need to be used to attain the maximum of safety.

1. You should check your headlights and cab lights regularly to see that they (a) are properly adjusted, (b) have

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clean lenses, (c) all filaments will light. You should likewise check your trailer lights, stop and turn signals and reflectors.

2. You should drive your vehicle at a speed consistent with its braking ability and the degree of visibility afforded by your headlights. Be cautious of vehicles parked at the side of the road or on the shoulder. Be cautious of vehicles displaying only one headlight.
3. Your speed should be reduced when you are confronted by bright lights of an oncoming vehicle. You should dim your lights for oncoming traffic.
4. Use low beams when driving through a city or town and turn your parking lights on at once when parking. *Do not drive with just your parking lights.*
5. Use low beams at dusk so that oncoming drivers and pedestrians can see you.

Winter Driving

New drivers as well as veterans need to be made aware of the special care and attention required for driving in winter conditions. Snow and freezing rain create problems which are not present in normal driving conditions. Decreased traction and poor visibility are the main causes of winter driving problems.

Special attention should be given to the ice patches on and under bridges, on curves and on expressway ramps, even though the road may be clear in other places. Note that hydro-planing also requires special attention year-round. Remember, snow and ice are conditions, but it is the driver's responsibility to adjust to the conditions.

1. Clean all windows fully.
2. Start slowly — fast starts only spin the wheels.
3. Adjust your speed to road conditions.
4. Before entering traffic, try the road surface by light brake

applications. Feel how your unit reacts.

5. Brakes should be applied in a manner suited for the equipment requirements.
6. Use the engine braking power by not disengaging the clutch too quickly when stopping.
7. Give yourself stopping distance — don't follow too closely. Be familiar with and use the minimum of two seconds.
8. Always ventilate the cab of your vehicle. Carbon monoxide is dangerous.
9. Beware of ruts and crowned roads, even at low speeds.

Children

The action of children, just like the wind, is unpredictable. The actions of a professional driver must be those of calculated prediction when children are present.

1. When driving through city or town, always be on the alert for children darting out from behind or between parked cars.
2. During school vacations, be cautious of children playing in or near the street.
3. Obey school speed zone limits. These limits should not be exceeded, and under certain traffic and weather conditions, the posted speed may be too fast.

NOTE:

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CHAPTER 7

ROAD CONDITIONS AND WEATHER

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ROAD CONDITIONS AND WEATHER

(This material can be duplicated and used as a handout to trainees.)

Winter

When approaching winter driving, probably the most important thing to do is get your mind prepared for the hazards that you will encounter. Keeping your mind ahead of the vehicle becomes more important during the winter months. The switch from relatively hazard-free summer driving to winter driving is perhaps the hardest adjustment to make.

One major change that must be made is to decrease speed and increase following distance. The two-second rule for following should be increased to at least five seconds or more, depending on conditions. The need for reducing speed should be obvious.

All acceleration and braking should be as smooth as possible. Spinning tires have no traction and give you no control. If they suddenly gain traction, it can send you careening out of control. When braking, be sure to use caution so that the brakes do not lock and send you out of control. Sliding wheels also have no traction.

Be sure to clean *all* windows thoroughly. You cannot hope to avoid what you cannot see. Also, clean off the rear view mirrors. It is important to get the entire picture to help avoid potentially hazardous situations. Also check and clean all lights and reflectors to assist your own visibility and your vehicle's visibility to others.

One often neglected but very important accessory is a set of tire chains. Tire chains increase traction up to 500% over good snow tires. The important thing to remember about tire chains is to put them on before you get stuck. They are of no use if they are left in the tool box.

The best way to avoid dangerous situations during the winter months is *not* to drive. Although this is not always possible, it is a decision that sometimes must be made. If conditions become so severe that it becomes more hazardous to keep driving, then you should get off the road completely and let conditions clear. Get as far off the roadway as possible and turn on your four-way flashers.

Any time of transition is particularly hazardous. It is infinitely more slippery at or near the freezing point than it is at 0°, for instance. When you notice that the temperature is between 28° and 34°, extra care must be exercised. A particularly hazardous condition is called "black ice." The roadway appears to be slightly damp but is in fact glare ice covered. This occurs at this transition time.

Driving in rainy weather can also be extremely hazardous. The first ten minutes of a rain storm can be the most dangerous because of the oil and grease that have built up on the road. When the rain water gets on this, it becomes extremely slippery. Another hazardous situation in the rain is hydroplaning. It can occur at speeds as low as 30 MPH. During hydroplaning, the entire vehicle is lifted off the surface of the road. Tire condition and speed are of the most concern to prevent this situation. If your tires are in good condition, they

will channel the water off. If they are smooth, they will lift more easily. Excessive speed will also tend to lift the tires more quickly.

For all inclement weather conditions, caution is the key word. You must adjust your driving speed and following distances for the existing conditions. Allow yourself extra room to stay out of dangerous situations. Turn on your headlights so that you can see and be seen. Don't assume that all other drivers on the road are looking out for you. You must look out for them.

Mechanical Breakdown

Breakdowns are one of the most aggravating and costly occurrences you will encounter as a driver. They are also one of the easiest annoyances to avoid. A thorough daily pre-trip inspection will help avoid most common problems.

As you inspect your vehicle each day, be sure to document properly each and every defect each day until it is taken care of. If you are responsible for the maintenance of your own vehicle, insure that each problem is cared for. Don't allow a minor problem to become a major one.

Even if you do a thorough pre-trip each day, it is still possible that you may have a breakdown on the road. If you do, it is of primary importance to get the vehicle as far off the roadway as possible. Don't let your vehicle become a hazard to others on the road. If you feel your vehicle begin to falter, get off the road as soon as possible. Don't try to go "just a little farther" and then not get off the road at all.

After you have gotten off the roadway, it is important immediately to get out the emergency warning devices. Each truck should be equipped with the standard warning triangles. You should use the four-way flashers while you are placing the warning triangles and after they are placed, but you cannot use them in place of the triangles.

On a two lane road, one reflector should be placed ten feet in front of or behind the vehicle. One should be placed 100 feet ahead of the vehicle and one should be placed 100 feet behind the vehicle. On a one-way or divided highway, they should be placed at 10 feet, 200 feet and 300 feet behind.

The main idea here is properly to pre-trip and maintain the vehicle so that mechanical breakdowns can be held to a minimum. If you *do* break down, get as far off the road as possible and immediately place your emergency warning devices.

Accidents

An accident is the one emergency that we all fear the most. Although an accident is a tragic occurrence, the tragedy may be compounded by improper actions after the accident. There are some specific procedures which can be followed.

The first step to take at an accident is to place flares or reflectors and protect the scene from approaching traffic. The unsuspecting driver may drive into the accident scene and add to the misfortune. Park your own vehicle well beyond the accident scene so that it cannot be a target for approaching vehicles.

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Cover the victims with a jacket or blanket and try to reassure them. Regardless of what you think about their condition, try to ease their minds and help them to be as comfortable as possible.

After you have taken care of the injured as best you can, then send for the ambulance, rescue squad, fire department and police. If you are sending another person, be sure to give him complete information about the location and the seriousness of the accident. Then have the person repeat the instructions to be sure that he understands them.

If you are involved in the accident, then also get word to your immediate supervisor. He will want to know the pertinent information so he can make the determination if any other agencies such as the E.P.A. need to become involved. Identify yourself to authorities.

Don't leave the scene of the accident unless it is absolutely necessary to get help. Your vehicle and your cargo are still your responsibility.

If involved, obtain statements from any observers present. Make no statements of liability to anyone at the scene. In fact, you should talk only to company personnel, law officers or representatives of your company's insurance firm.

Finally, as soon as you are reasonably able, make out an on-the-spot accident report while the details are still fresh in your mind. Make it as complete as you can. Include a scaled map, landmarks in the area and, especially, any contributing factors. Write anything you think may be pertinent. A report must be written for each accident, regardless of how slight the damage.

If you cannot assist at the accident scene, the best thing you can do is to go on. The more people on the scene, the greater the confusion.

If you are involved in an accident, keep a cool head. Do what you know how for the injured. Assist wherever you can, but if there is nothing for you to do, don't become an idle spectator. Be on your way if you are not involved.

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CHAPTER 8

RULES AND REGULATIONS

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RULES AND REGULATIONS

Department of Transportation rules and regulations are found in complete detail in the PTCA Driver's Handbook. This section is intended to give you a summary of rules with which the driver must be familiar.

Speed Limit

The national speed limit is 55 miles per hour. You are to obey the law at all times. Observe lower speed limits where posted.

Traffic Signs

The United States is moving toward an international type system of traffic control devices which emphasize pictures and symbolic signs rather than written messages. Symbols provide almost instant communication with the driver, since they can be understood at a glance without having to read.

Color of Signs

- Red indicates stop or a prohibition.
- Green shows movement permitted or gives directional guidance.
- Blue is for signs leading to motorist services.
- Yellow indicates a general warning.
- Black on white indicates regulatory signs such as those for speed.
- Orange tells of construction and maintenance warnings.
- Brown is for public recreation and scenic guidance.

Shapes of Signs

- Diamond shape signifies a warning.
- Rectangular vertical provides a traffic regulation.
- Rectangular horizontal contains guidance information.
- Octagon shape means stop.
- A triangle on its point means yield.
- A pennant shape means no passing.
- A pentagon means school.
- A circle warns of a railroad crossing.

Traffic Signals

The only time a traffic signal may be disregarded is when a traffic officer is on duty. At this time, his instructions will prevail.

A flashing yellow light means slow down and proceed with caution if the way is clear.

A flashing red light means that you must come to a full stop before proceeding, if the way is clear.

Pavement Markings

In pavement markings, yellow is used much more than in the past. Yellow lines will indicate the separation of traffic flow in opposing traffic directions. The center line on two-way roadways will be dashed yellow to differentiate from the dashed

white lines on multi-lane one-way roadways. This will warn drivers who leave one-way roadways that traffic will be opposing them to the left of the yellow line.

Other uses of yellow include occasional left edge lines on divided roadways where traffic cannot pull entirely off the roadway, and for the marking of obstructions and islands which must be passed on the right.

Railroad Crossings

Approach all railroad crossings with the expectation that a train is coming. Reduce speed in accordance with the driver's ability to see approaching trains in any direction. Speed must be held to a point which will permit the driver to stop short of the tracks, if a stop is necessary. Never permit traffic conditions to trap you in a position where you have to stop on the tracks.

A full stop is required at grade crossings by all vehicles transporting hazardous materials. (This includes all vehicles on which placards are required.) The full stop must not be more than 50 feet nor less than 15 feet from the nearest rail of the crossing. Proceed with caution after determining the right-of-way is clear. Flashing all four-way flashers prior to stopping is required as a warning to following vehicles that you intend to stop. Never shift gears while crossing tracks. Double tracks require double checking. Remember that a train on one track may hide a train on another track.

The Right-of-Way

Laws have been adopted giving one vehicle the right-of-way under certain conditions. But don't rely on always getting the right-of-way and don't insist on it.

The driver of a vehicle approaching an intersection shall yield the right-of-way to any vehicle that has already entered the intersection from a different highway. If two vehicles enter an intersection from different highways at approximately the same time, the driver of the vehicle on the LEFT shall YIELD the right-of-way to the driver on the right.

Always slow down or stop and yield the right-of-way to any pedestrian crossing the street or highway within any marked or unmarked cross walk.

At intersections where stop signs are located on all four corners (4 way stop), the first vehicle to come to a complete stop should be given the right-of-way.

In making a left turn at any intersection, the driver making such a left turn must yield the right-of-way to all pedestrians and any vehicle approaching from the opposite direction.

The driver of a motor vehicle about to enter a cross street or highway from a private roadway, driveway or alley must stop and yield to pedestrians and vehicles approaching from either direction.

The driver of any motor vehicle leaving from a parked position should be careful to give the right-of-way to all moving traffic. Vehicles moving more slowly should yield the right-of-way to all vehicles approaching from the rear by moving as far as possible to the right.

Drivers of any vehicles must stop upon meeting or overtaking any marked school bus which has stopped for the

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purpose of receiving or discharging children.

Passing

Never attempt to pass another vehicle coming from the opposite direction unless you are 100% certain it is safe to do so. You must judge the speed of the oncoming vehicle and compensate his speed with yours. *Never* attempt to pass when nearing or crossing a street or highway intersection. *Never* attempt to pass when nearing a bridge, viaduct, tunnel or underpass. *Never* attempt to pass at or near a railroad crossing. *Never* attempt to pass on a hill, curve or any section of highway where you cannot see sufficiently far ahead. *Never* attempt to pass when the solid yellow line is on your side of the center line.

Federal DOT Regulations

391.11 Qualifications of Drivers

- A. A person shall not drive a motor vehicle unless he is qualified to drive a motor vehicle. A motor carrier shall not require or permit a person to drive a motor vehicle unless that person is qualified to drive a motor vehicle.
- B. A person is qualified if he:
 - 1. is 21 years old.
 - 2. can read and speak English.
 - 3. can, by experience or training, safely operate the type of motor vehicle he drives.
 - 4. can determine whether the cargo he transports has been properly located, distributed or secured.
 - 5. is familiar with methods for securing cargo.
 - 6. is physically qualified every 2 years.
 - 7. has the proper valid license to operate the motor vehicle.
 - 8. has prepared and furnished a list of violations annually.
 - 9. has never been convicted of any criminal act or misconduct according to Section 391.15.
 - 10. has successfully completed a road test and holds certificate.
 - 11. has successfully completed a DOT Written Test and holds certificate.
 - 12. has furnished employer with an application of employment.

391.41 Physical Qualifications for Drivers

- A. A person shall not drive a motor vehicle unless he is physically qualified to do so. He must also have on his person a copy of the medical certificate.
- B. To be qualified, he must:
 - 1. Have no loss of foot, leg, hand or arm.
 - 2. have no impairment of the use of a foot, leg, hand, fingers or arm that would impair his ability to control and safely drive a motor vehicle.
 - 3. have no medical history or diagnosis of diabetes currently requiring insulin for control.
 - 4. have no current clinical diagnosis of myocardial

infarction, angina, coronary insufficiency or any cardiovascular disease.

- 5. have no medical history or diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a motor vehicle safely.
- 6. have no clinical diagnosis of high blood pressure consistently over 160/90 that will interfere with the safe operation of a motor vehicle.
- 7. have no medical history or diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular or vascular disease which interferes with his ability to drive a motor vehicle safely.
- 8. have no epilepsy or any condition likely to cause loss of consciousness or loss of ability to control a motor vehicle.
- 9. have no mental, nervous, organic or psychiatric disorder that will interfere with the ability to drive a motor vehicle safely.
- 10. must have at least corrected 20/40 visual acuity in each eye.
- 11. must be able to hear a forced whisper at no less than 5 feet with or without the use of a hearing aid.
- 12. does not use an amphetamine, narcotic or any habit forming drug.
- 13. has no clinical diagnosis of alcoholism.

Pre-Trip Inspection

392.7 Equipment inspection and use

No motor vehicle shall be driven unless the driver thereof shall have satisfied himself that the following parts and accessories are in good working order:

- Service brakes including trailer brake connections
- Parking (hand) brake
- Steering mechanism
- Lighting devices and reflectors
- Tires
- Horn
- Windshield wipers
- Rear vision mirrors
- Coupling devices
- All emergency equipment
 - Fire extinguisher (charged)
 - First aid kit
 - Flares and flags
 - Warning triangles

Driving of Vehicles

392.10 Railroad grade crossings

A driver must stop within 50 feet of and not closer than 15 feet to the tracks, listen and look in each direction. When safe to do so, the driver may drive the vehicle across the tracks in a gear that permits the vehicle to complete the crossing without a change of gears. The driver must not shift gears while crossing the tracks.

Who must stop:

- 1. Every bus transporting passengers
- 2. Every motor vehicle transporting any quantity of

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chlorine

3. Every motor vehicle which is required to be placarded with one of the following markings:

- A. Explosives A
- B. Explosives B
- C. Poisons
- D. Flammable
- E. Oxidizers
- F. Non-Flammable Gas
- G. Corrosives
- H. Flammable Gas
- I. Radioactive
- J. Dangerous
- K. Combustible
(cargo tanks only)

4. Every cargo tank motor vehicle which is loaded or empty which must be placarded.

392.16 Use of seat belts

A motor vehicle which has a seat belt installed at the driver's seat shall not be driven unless the driver has properly restrained himself with the seat belt assembly.

392.22B Placement of warning devices

Whenever a vehicle is stopped upon the traveled portion of a highway or the shoulder of a highway for any cause other than necessary traffic stops, the driver shall, as soon as possible, place 3 reflective triangles or reflectors in the following manner:

- 1. One at the traffic side of the stopped vehicle within 10 feet of the front or rear of the vehicle.
- 2. One at a distance of approximately 100 feet from the stopped vehicle in the center of the lane or shoulder occupied by the vehicle and in the direction of the other approaching vehicles.
- 3. One at a distance of approximately 100 feet from the stopped vehicle in the center of the lane or shoulder occupied by the vehicle and in the direction the traffic is moving.
- 4. Limited access highways should have all three placed at spaces listed in 1, 2, 3, — all in the direction the vehicle is approaching.

Prohibited Practices

392.60 Unauthorized person not to be transported

Unless specifically authorized in writing to do so by the motor carrier, no driver shall transport any person or permit any person to be transported on any motor vehicle other than a bus.

Hours of Service of Drivers

Definitions

395.2 On duty time

All time from the time the driver begins to work or is required to be in readiness to work until the time he is relieved from work and all responsibility for performing work.

Such as:

- 1. time waiting to be dispatched
- 2. all time inspecting or servicing motor vehicle
- 3. all driving time
- 4. all time other than driving time except while resting in sleeper berth
- 5. all time loading and unloading
- 6. all time involved relating to accidents
- 7. all time repairing or obtaining assistance for disabled vehicle
- 8. all time breaks and rest breaks

Driving time

The term *driving time* shall include all the time spent at the driving controls of a motor vehicle in operation.

395.3 Maximum driving and on duty time

- A. No motor carrier shall permit or require any driver to drive more than 10 hours following 8 consecutive hours off duty, or drive for any period after having been on duty 15 hours following 9 consecutive hours off duty.
- B. No motor carrier shall permit or require any driver used by it to be on duty more than 70 hours in any 8 consecutive days.

395.8 Instructions for use of driver's daily log

- 1. Driver's Daily Log. Except as provided under paragraph (T) of this section, every motor carrier shall require that a driver's daily log, Form MCS-59 set forth below, shall be made in duplicate by every driver used by him or it, and every driver who operates a motor vehicle shall make such a log. Failure to make logs, failure to make required entries therein, falsification of entries or failure to preserve logs shall make both the driver and the carrier liable for prosecution. Driver's logs shall be prepared and retained in accordance with the provision of Paragraphs 2-19 of this section.
- 2. Entries to be current. Drivers shall keep the log current to the time of the last change of duty status. The only permitted abbreviations are the names of the states.
- 3. Entries to be made by driver or co-driver only. Except the name of the principal place of business of the carrier may be printed, all entries shall be made by the driver in his own handwriting.
- 4. Date. Enter month, day and year for each calendar day on or off duty.
- 5. Total mileage. Total mileage entered shall be that mileage traveled while driving, on duty but not driving, and resting in sleeper berth during the day covered by the log. Mileage while driving shall be shown separately.
- 6. Vehicle identification. The carrier vehicle number or the state and license number or numbers of each vehicle or unit of a combination operated during

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- the calendar year shall be entered.
7. Name of carrier. The company name and principal place of business shall be shown on each log.
 8. Driver's signature. The driver shall certify to the correctness of the log by signing his first name and last name in full and his middle initial. Below the driver's signature, he shall list the initials and last name of each co-driver.
 9. Home terminal. The driver's home terminal address shall be shown and be that at which he normally reports for duty.
 10. Time base to be used. The log shall be prepared, maintained and submitted using the time standard in effect at the driver's home terminal for a 24-hour calendar day beginning at midnight.
 11. Line 1 Off Duty. Except for times spent resting in a sleeper berth, a continuous line shall be drawn between the appropriate time markers to record the period or periods of time when the driver is not on duty, not required to be in readiness to work, or is not under any responsibility for performing work.
 12. Line 2 Sleeper berth. A continuous line shall be drawn between the appropriate time markers to record the period or periods of time off duty resting in a sleeper berth.
 13. Line 3 Driving. A continuous line shall be drawn between the appropriate time markers to record the periods of time on duty driving a motor vehicle.
 14. Line 4 On-duty not driving. A continuous line shall be drawn between the appropriate time markers to record the periods of time on duty not driving as in 395.2 On Duty Time.
 15. Remarks. The appropriate time marker and the name of the city, town or village, with state abbreviated, or place at or near which each change of duty occurs, shall be recorded, such as the place of reporting to work, starting to drive, on duty not driving and where released from work.
Show the transportation performed each day by entering the shipping document number or numbers or name of a shipper and commodity. (A loading ticket which is numbered can also be used.)
 16. Total hours. The total hours in each duty status, off duty other than sleeper berth, off duty in sleeper berth, driving and on duty not driving shall be entered, the total of which entries shall equal 24 hours.
 17. Origin and destination. The name of the place where a trip begins and the final destination or farthest turn-around point shall be shown at the bottom of the log. If a driver departs from and returns to the same place on any day, the destination shall be indicated by entering the farthest point reached followed by the words "and return." If the trip requires more than one calendar day, the log for each day shall show the original and final destinations with the words "and return" shown on the last day's log.
 18. Filing driver's log. The driver shall forward, each day, the original log to his home terminal.
 19. Preservation of driver's log. Daily logs for each calendar month may be retained at the driver's home terminal until the 15th day of the succeeding calendar month and shall then be forwarded to the carrier's principal place of business where they shall be retained for 12 months from date of receipt. The driver shall retain a copy of each daily log for 30 days which shall be in his possession while on duty.

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Operations

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DRIVER QUALIFICATION FILE	9/15/85	9/15/85	

GENERAL

The Code of Federal Regulations (CFR) Title 49, Section 391.51, requires each motor carrier to maintain a driver qualification file for each driver it employs.

DOCUMENTA-
TION FORMS
REQUIRED

1. For a regularly employed driver on a continuous basis hired before January 1, 1971.
 - a. Sec. 391.43 - Physical Examination Exhibit 1
 - b. Sec. 391.25 - Annual Review of Driving Record Exhibit 2
 - c. Sec. 391.27 - Record of Violations Exhibit 3
2. For a regularly employed driver on a continuous basis hired after January 1, 1971.
 - a. Sec. 391.43 - Physical Examination Exhibit 1
 - b. Sec. 391.25 - Annual Review of Driving Record Exhibit 2
 - c. Sec. 391.27 - Record of Violations Exhibit 3
 - d. Sec. 391.21 - Application for Employment Exhibit 4
 - e. Sec. 391.23- Check of Driving Record (for each state from which the applicant has ever obtained a driver's license.) Exhibit 5
 - Request from Previous Employer Exhibit 6
 - f. Sec. 391.31 - Record of Road Test Exhibit 7
 - Certification of Road Test Exhibit 8

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McKesson Operations

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DOCUMENTA-
TION FORMS
REQUIRED
(Cont.)

- g. Sec. 391.35 - Written Examination Exhibit 9
- Answers to Examination Exhibit 10
- Certificate of Examination Exhibit 8
- h. Sec. 395.8 - Driver Data Sheet Exhibit 11
- i. Driver Pocket Cards Exhibit 12
- 3. For intermittent, casual, or occasional drivers.
(Temporary Driver)
 - a. Sec. 391.43 - Certificate Medical Examination Exhibit 12
 - b. Sec. 391.31 - Certification of Road Test Exhibit 12
 - c. Sec. 391.35 - Certificate of Written Examination
(copy of the questions and answers) Exhibit 12
 - d. Sec. 395.8 - Driver Data Sheet
(past seven days) Exhibit 11
 - e. - Social Security Number,
Operation License I.D.
Number, & type vehicle
permitted to drive

MKIL40594

MK095004

PHYSICAL EXAMINATION OF DRIVERS

Name: _____ CHEM OP 30.70 Exhibit 1
9/15/85 9/15/85
Address: _____
Social Security No.: _____ Date of Birth: _____ Age: _____

☐ New Certification ☐ Recertification

HEALTH HISTORY

Yes	No		Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Head or spinal injuries.	<input type="checkbox"/>	<input type="checkbox"/>	Nervous stomach.
<input type="checkbox"/>	<input type="checkbox"/>	Seizures, fits, convulsions, or fainting.	<input type="checkbox"/>	<input type="checkbox"/>	Rheumatic fever.
<input type="checkbox"/>	<input type="checkbox"/>	Extensive confinement by illness or injury.	<input type="checkbox"/>	<input type="checkbox"/>	Asthma.
<input type="checkbox"/>	<input type="checkbox"/>	Cardiovascular disease.	<input type="checkbox"/>	<input type="checkbox"/>	Kidney disease.
<input type="checkbox"/>	<input type="checkbox"/>	Tuberculosis.	<input type="checkbox"/>	<input type="checkbox"/>	Muscular disease.
<input type="checkbox"/>	<input type="checkbox"/>	Syphilis.	<input type="checkbox"/>	<input type="checkbox"/>	Suffering from any other disease.
<input type="checkbox"/>	<input type="checkbox"/>	Gonorrhea.	<input type="checkbox"/>	<input type="checkbox"/>	Permanent defect from illness, disease or injury.
<input type="checkbox"/>	<input type="checkbox"/>	Diabetes.	<input type="checkbox"/>	<input type="checkbox"/>	Psychiatric disorder.
<input type="checkbox"/>	<input type="checkbox"/>	Gastrointestinal ulcer.	<input type="checkbox"/>	<input type="checkbox"/>	Any other nervous disorder.

If answer to any of the above is yes, explain: _____

PHYSICAL EXAMINATION

General appearance and development: Good: _____ Fair: _____ Poor: _____
Vision: For distance: Right 20/____ Left 20/____ ☐ Without corrective lenses ☐ With corrective lenses if worn
Evidence of disease of injury: Right: _____ Left: _____ Color Test: _____
Horizontal field of vision: Right: _____ Left: _____
Hearing: Right ear: _____ Left ear: _____ Disease or injury: _____
Audiometric Test (complete only if audiometer is used to test hearing) decibel loss at 500 Hz _____,
at 1,000 Hz _____, at 2,000 Hz _____
Throat: _____
Thorax: Heart _____ If organic disease is present, is it fully compensated? _____
Blood pressure: Systolic _____ Diastolic _____
Pulse: Before exercise _____ Immediately after exercise _____ Lungs: _____
Abdomen: Scars _____ Abnormal masses _____ Tenderness _____
Hernia: Yes _____ No _____ If so, where? _____ Is truss worn? _____
Gastrointestinal: Ulceration or other disease: Yes _____ No _____
Genito-Urinary: Scars _____ Urethral discharge _____
Reflexes: Romberg _____ Pupillary _____ Light R _____ L _____
Accommodation Right _____ Left _____
Knee Jerks: Right: Normal _____ Increased _____ Absent _____
Left: Normal _____ Increased _____ Absent _____
Remarks: _____
Extremities: Upper _____ Lower _____ Spine _____
Laboratory and other Special Findings: Urine: Spec. Gr. _____ Alb. _____ Sugar _____
Other laboratory data (serology, etc) _____
Radiological data _____ Electrocardiograph _____
General comments: _____

(Date of examination) (Address of examining doctor) (Name of examining doctor)(Print)

(Signature of examining doctor)

NOTE: This section to be completed only when visual test is conducted by a licensed optometrist.

(Date of examination) (Address of optometrist) (Name of optometrist)(Print)

(Signature of optometrist)

MEDICAL EXAMINER'S CERTIFICATE

I certify that I have examined _____ in accordance with the Federal Motor Carrier Safety Regulations
(Driver's name)(Print)
(49 CFR 391.41-391.49) and with knowledge of his duties, I find him qualified under the regulations.

- ☐ Qualified only when wearing corrective lenses.
☐ Qualified only when wearing a hearing aid.

MKIL40595

A completed examination form for this person is on file in my office at _____
(Address)

(Date of examination) (Name of examining doctor)(Print) (Signature of examining doctor)

(Address of driver) (Signature of driver)

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March, Wisconsin 54808 - (414) 722-2848

Book No. 28

MK095005

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McK00445

INSTRUCTIONS FOR PERFORMING AND RECORDING PHYSICAL EXAMINATIONS

The examining physician should review these instructions before performing the physical examination. Answer each question yes or no where appropriate.

The examining physician should be aware of the rigorous physical demands and mental and emotional responsibilities placed on the driver of a commercial motor vehicle. In the interest of public safety the examining physician is required to certify that the driver does not have any physical, mental, or organic defect of such a nature as to affect the driver's ability to operate safely a commercial motor vehicle.

GENERAL INFORMATION. The purpose of this history and physical examination is to detect the presence of physical, mental, or organic defects of such a character and extent as to affect the applicant's ability to operate a motor vehicle safely. The examination should be made carefully, and at least as complete as indicated by the attached form. History of certain defects may be cause for rejection or indicate the need for further laboratory tests or a further, and more stringent, examination. Defects may be recorded which do not, because of their character or degree, indicate that certification of physical fitness should be denied. However, these defects should be discussed with the applicant and he should be advised to take the necessary steps to insure correction, particularly of those which, if neglected, might lead to a condition likely to affect his ability to drive safely.

GENERAL APPEARANCE AND DEVELOPMENT. Note marked overweight. Note any posture defect, perceptible limp, tremor, or other defects that might be caused by alcoholism, thyroid intoxication, or other illnesses. The Motor Carrier Safety Regulations provide that no driver shall use a narcotic or other habit-forming drug.

HEAD-EYES. When other than the Snellen chart is used, the results of such test must be expressed in values comparable to the standard Snellen test. If the applicant wears corrective lenses, these should be worn while applicant's visual acuity is being tested. If appropriate, indicate on the Medical Examiner's Certificate by checking the box, "Qualified only when wearing corrective lenses." In recording distance vision use 20 feet as normal. Report all vision as a fraction with 20 as numerator and the smallest type read at 20 feet as denominator. Note ptosis, discharge, visual fields, ocular muscle imbalance, color blindness, corneal scar, exophthalmos, or strabismus, uncorrected by corrective lenses. Monocular drivers are not qualified to operate commercial motor vehicles under existing Motor Carrier Safety Regulation.

If the driver habitually wears contact lenses, or intends to do so while driving, there should be sufficient evidence to indicate that he has good tolerance and is well adapted to their use. The use of contact lenses should be noted on the record.

EARS. Note evidence of mastoid or middle ear disease, discharge, symptoms of aural vertigo, or Meniere's Syndrome. When recording hearing, record distance from patient at which a forced whispered voice can first be heard. If audiometer is used to test hearing, record decibel loss at 500 Hz, 1,000 Hz, and 2,000 Hz.

THROAT. Note evidence of disease, irreparable deformities of the throat likely to interfere with eating or breathing, or any laryngeal condition which could interfere with the safe operation of a motor vehicle.

THORAX-HEART. Stethoscopic examination is required. Note murmurs and arrhythmias, and any past or present history of cardiovascular disease, of a variety known to be accompanied by dyspnea, collapse, enlarged heart, or congestive heart failure. Electrocardiogram is required when findings so indicate.

BLOOD PRESSURE. Record with either spring or mercury column type of sphygmomanometer. If the blood pressure is consistently above 160/90 mm Hg., further tests may be necessary to determine whether the driver is qualified to operate a motor vehicle.

LUNGS. If any lung disease is detected, state whether active or arrested; if arrested, your opinion as to how long it has been quiescent.

GASTROINTESTINAL SYSTEM. Note any diseases of the gastrointestinal system.

ABDOMEN. Note wounds, injuries, scars, or weakness of muscles of abdominal walls sufficient to interfere with normal function. Any hernia should be noted if present. State how long and if adequately contained by truss.

ABNORMAL MASSES. If present, note location, if tender, and whether or not applicant knows how long they have been present. If the diagnosis suggests that the condition might interfere with the control and safe operation of a motor vehicle, more stringent tests must be made before the applicant can be certified.

TENDERNESS. When noted, state where most pronounced, and suggested cause. If the diagnosis suggests that the condition might interfere with the control and safe operation of a motor vehicle, more stringent tests must be made before the applicant can be certified.

GENITO-URINARY. Urinalysis is required. Acute infections of the genito-urinary tract, as defined by local and State public health laws, indications from urinalysis of uncontrolled diabetes, symptomatic albumin-urea in the urine, or other findings indicative of health conditions likely to interfere with the control and safe operation of a motor vehicle, will disqualify an applicant from operating a motor vehicle.

NEUROLOGICAL. If positive Romberg is reported, indicate degrees of impairment. Pupillary reflexes should be reported for both light and accommodation. Knee jerks are to be reported absent only when not obtainable upon reinforcement and as increased when foot is actually lifted from the floor following a light blow on the patella, sensory vibratory and positional abnormalities should be noted.

EXTREMITIES. Carefully examine upper and lower extremities. Record the loss or impairment of a leg, foot, toe, arm, hand, or fingers. Note any and all deformities, the presence of atrophy, semiparalysis or paralysis, or varicose veins. If a hand or finger deformity exists, determine whether sufficient grasp is present to enable the driver to secure and maintain a grip on the steering wheel. If a leg deformity exists, determine whether sufficient mobility and strength exist to enable the driver to operate pedals properly. Particular attention should be given to and a record should be made of any impairment or structural defect which may interfere with the driver's ability to operate a motor vehicle safely.

SPINE. Note deformities, limitation of motion, or any history of pain, injuries, or disease, past or presently experienced in the cervical or lumbar spine region. If findings so dictate, radiologic and other examinations should be used to diagnose congenital or acquired defects; or spondylolisthesis and scoliosis.

RECTO-GENITAL STUDIES. Diseases or conditions causing discomfort should be evaluated carefully to determine the extent to which the condition might be handicapping while lifting, pulling, or during periods of prolonged driving that might be necessary as part of the driver's duties.

LABORATORY AND OTHER SPECIAL FINDINGS. Urinalysis is required, as well as such other tests as the medical history or findings upon physical examination may indicate are necessary. A serological test is required if the applicant has a history of luetic infection or present physical findings indicate the possibility of latent syphilis. Other studies deemed advisable may be ordered by the examining physician.

DIABETES. If insulin is necessary to control a diabetic condition, the driver is not qualified to operate a motor vehicle. If mild diabetes is noted at the time of examination and it is stabilized by use of a hypoglycemic drug and a diet that can be obtained while the driver is on duty, it should not be considered disqualifying. However, the driver must remain under adequate medical supervision.

The physician must date and sign his findings upon completion of the examination.

MINIMUM REQUIREMENTS OF SECTION 391.41

(a) A person shall not drive a motor vehicle unless he is physically qualified to do so and, except as provided in 391.67 has on his person the original, or a photographic copy, of a medical examiner's certificate that he is physically qualified to drive a motor vehicle.

(b) A person is physically qualified to drive a motor vehicle if he:

- (1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a waiver pursuant to Sec. 391.49;
- (2) Has no impairment of the use of a foot, a leg, a hand, fingers, or an arm, and no other structural defect or limitation, which is likely to interfere with his ability to control and safely drive a motor vehicle, or has been granted a waiver pursuant to Sec. 391.49 upon a determination that the impairment will not interfere with his ability to control and safely drive a motor vehicle;
- (3) Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control;
- (4) Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure;
- (5) Has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a motor vehicle safely;
- (6) Has no current clinical diagnosis of high blood pressure likely to interfere with his ability to operate a motor vehicle safely;

(7) Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his ability to control and operate a motor vehicle safely;

(8) Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a motor vehicle;

(9) Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his ability to drive a motor vehicle safely;

(10) Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70° in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green, and amber.

(11) First perceives a forced whispered voice in the better ear at not less than 5 feet with or without the use of a hearing aid or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ASA Standard) 224.5-1951.

(12) Does not use an amphetamine, narcotic, or any habit-forming drug; and

(13) Has no current clinical diagnosis of alcoholism.

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McK00446

ANNUAL REVIEW OF DRIVING RECORD

NAME OF DRIVER: _____

ADDRESS: _____
(Number & Street) (City) (State) (Zip Code)

SOCIAL SECURITY NUMBER: _____ DATE OF EMPLOYMENT _____

INSTRUCTIONS TO CARRIER: Review the driving record of the employee in accordance with Section 391.25 and as outlined below. Complete the Certificate of Review as listed. Any remarks may be shown on the reverse side.

In accordance with Department of Transportation Section 391.25 a motor carrier shall, at least once every 12 months, review the driving record of each driver it employs to determine whether that driver meets minimum requirements for safe driving or is disqualified to drive a motor vehicle pursuant to Section 391.15.

In reviewing a driving record, the motor carrier must consider any evidence that the driver has violated applicable provisions of the Federal Motor Carrier Safety Regulations and the Hazardous Materials Regulations. The motor carrier must also consider the driver's accident record and any evidence that the driver has violated laws governing the operation of motor vehicles, and must give great weight to violations, such as speeding, reckless driving, and operating while under the influence of alcohol or drugs, that indicate that the driver has exhibited a disregard for the safety of the public.

CERTIFICATE OF REVIEW

I have hereby reviewed the driving record of the above named driver in accordance with Section 391.25 and find that he (Check One)

DATE	NAME OF PERSON REVIEWING	Meets Minimum Requirements for Safe Driving	Is Disqualified to drive a motor vehicle pursuant to Section 391.15
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

REMARKS TO BE MADE ON REVERSE SIDE CONCERNING DISQUALIFICATION

(This form is constructed to meet DOT requirements per Section 391.25)

MKIL40597

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McK00447

ANNUAL REVIEW OF DRIVING RECORD

REMARKS SECTION

REMARKS — INITIAL REVIEW FOR 12 MONTH PERIOD

Date

	YES	NO
Company ID & Qualification Card Issued		
Letter of Disqualification Issued		

REMARKS — SUBSEQUENT REVIEW DURING 12 MONTH PERIOD

Date

	YES	NO
Company ID & Qualification Card Returned		
Letter of Disqualification Issued		

MKIL40598

Book No. 7B

MK095008



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MKIL189599
McK00448

MKIL189600
 McK00449

CHEM OP 30.70 Exhibit 4
9/15/85 9/15/85

McKesson

Application for Employment

Name
Position
Applied For

Please complete fully and legibly

This company is an equal opportunity affirmative action employer. No question on this application is asked for the purpose of limiting or excluding any applicant's consideration for employment because of his or her race, color, religion, sex, age, national origin, handicap, or veteran status.

Date Position Applied For Location Preferred

Available for Full Time Part Time Either If part time, what hours or days do you prefer?

Section A - Personal

Name, Last First Middle Home Telephone No.
Address, Street City State Zip Code Business Telephone No.

Social Security No. If you are not a U.S. citizen, do you have a legal right to work in the US? Yes No Salary Expected
Can you furnish necessary documentation of right to work in the US? Yes No

What led you to consider McKesson for employment?

Were you previously employed by McKesson? Yes No If so, Job Title:

Relatives employed by McKesson and positions held

Where and When?

MKIL40600

If under 18 can you furnish a work permit? Yes No

PER-20181-801

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McK00450

Section B—Work Experience Please start with your present or last position. You may include paid or unpaid volunteer service and military work experience.

Company or Organization		Address	
Type of Business	Employed From	To	Title
Salary or Salary Range	Kind of Work		
Supervisory Responsibility		Immediate Supervisor	Telephone Number
Duties Performed or Major Responsibilities			
Reasons for Leaving or Considering a Change			

Company or Organization		Address	
Type of Business	Employed From	To	Title
Salary or Salary Range	Kind of Work		
Supervisory Responsibility		Immediate Supervisor	Telephone Number
Duties Performed or Major Responsibilities			
Reasons for Leaving or Considering a Change			

Company or Organization		Address	
Type of Business	Employed From	To	Title
Salary or Salary Range	Kind of Work		
Supervisory Responsibility		Immediate Supervisor	Telephone Number
Duties Performed or Major Responsibilities			
Reasons for Leaving or Considering a Change			

Company or Organization		Address	
Type of Business	Employed From	To	Title
Salary or Salary Range	Kind of Work		
Supervisory Responsibility		Immediate Supervisor	Telephone Number
Duties Performed or Major Responsibilities			
Reasons for Leaving or Considering a Change			

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McK00451

Section C - To Be Completed By Applicants For Positions Requiring The Use Of Motor Vehicles Only

Do you Have A Valid Drivers License For This State? Yes No No Can you Obtain One? Yes No

To Be Completed By Clerical/Secretarial Applicants Only

Typing Speed Words per Minute How many Lines per Minute Can you Transcribe from a Dictation Machine? Yes No How many Typing & Shortened Spaces Delivered

What Business Machines Can You Operate?

Section D - Educational Record

Indicate Highest Grade Completed College Approximate Grade Attended Degrees

Major Minor Fields

Extra-Curricular Activities in School. Do not include any organization or membership that would indicate race, religion, age, sex, national origin, disability, veteran status or political affiliation

Extracurricular Activities in School

Section E - Health

Do you have a mental or physical disability which would create a hazard to you or others or which will require an accommodation to the job for which you are applying? Yes No Please describe any conditions or types of positions for which you should not be considered or positions you cannot perform because of a physical or mental handicap

Section F - Security

Have you ever been convicted of a felony? Yes No If yes, please give details. (A criminal record does not by itself bar a person from employment consideration with McKesson)

If yes, please give details

Section G - Career Goals

What are your career goals? Consider level of responsibility, kind of work, and income. What skills, experience, or knowledge do you have that qualify you for this position?

I hereby certify that the answers given by me on this application are true and correct without significant omissions of any kind. I agree to submit to a physical examination upon employment. I also authorize the companies or persons identified in this application, with the exceptions noted by me under "Work Experience," to give any information regarding my employment, together with any information they may have regarding me whether or not it is on their records. I hereby release said companies from any liability, damage whatsoever for issuing this information. I understand that misrepresentation or omission of facts on this application form or attached resume can be cause for dismissal.

Date Signed Signature of Applicant

MKIL40602

Applicants who would be expected to have access to the warehouses or products of McKesson Drug & Health Care Group, McKesson Wine & Spirits Group or Skaggs-Stone, should complete Addendum Number One of this application.

MK095012

MKIL189603
McK00452

This page is to be completed by new employee upon being hired.

Job Title			Salary \$			Salary Grade		
Hired By			Department					
Date of Hire, Month	Day	Year	Starting Date, Month	Day	Year	Date of Birth, Month	Day	Year

Are you subject to any recurring illness or allergies? If yes, please explain nature and frequency

List any serious illness, accidents, operations or nervous disorders you have had and approximate dates.

If you have been employed in a position that requires the use of a motor vehicle, please complete this section.

Have you a valid driver's license for this state?	Yes	No	License No.
Have you ever had your driver's license suspended or revoked? If yes, please explain	Yes	No	

In case of emergency who should be notified?					
Name, Last	First	Middle			
Address, Street	City	State	Zip Code	Phone No.	
Date Signed	Signature of Applicant				

All employees are requested to complete Addendum Number Two (Self-Identification), of the Application for Employment indicating their status as a member of a protected class.

Attach Addendum Number One (Per-87), if applicable; Employment Check-List (Per-85); Orientation Check-List (Per-89); Employment Agreement (Per-88), if applicable; and Interview Guide (Per-82), if use

MKIL40603

MK095013

MKIL189604
McK00453

REQUEST FOR CHECK OF DRIVING RECORD

1. In accordance with the provisions of Section 604 and Section 607 of the Fair Credit Reporting Act, Public Law No. 91-508, I hereby certify that the information requested below will be used for a "permissible purpose" as defined in the Act, and that the information received will be used for no other purpose.
2. I further certify that if the applicant named below is denied employment based upon the information received, I will identify the source of the report in accordance with Section 615 (a) of the Fair Credit Reporting Act.

(Signature of Requestor)

(Date)

TO: _____

CHEM OP 30.70 Exhibit 5
9/15/85 9/15/85
Page 1 of 1

GENTLEMEN:

The following named person has made application with our company for the position of _____. As in accordance with Section 391.23, Federal Department of Transportation Regulations, please furnish the undersigned with the applicant's driving record for the past three years.

NAME OF APPLICANT _____

ADDRESS _____
(Number & Street) (City) (State) (Zip Code)

FORMER ADDRESS _____
(Number & Street) (City) (State) (Zip Code)

RACE _____ SEX _____ DATE OF BIRTH _____

SOCIAL SECURITY NUMBER _____ LICENSE NUMBER _____

REQUESTED BY

MKIL40604

(Name of Company)

(Typed Name)

(Address)

(Title)

(City)

(State)



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(Signature)

Form No. 16F

MK095014

MKIL189605
McK00454

REQUEST FOR INFORMATION From Previous Employer

CHEM OP 30.70
9/15/85

Exhibit 6
9/15/85

I hereby authorize you to release the following information to

_____ for purposes of investigation

(Prospective Employer)

as required by Section 391.23 of the Federal Motor Carrier Safety Regulations.
You are released from any and all liability which may result from furnishing
such information.

(Date)

(Applicant's Signature)

Gentlemen:

The below named individual has made application to this company for a position as _____

_____ and states that he was employed by you as _____

_____ from _____ to _____.

We appreciate your time in completing, in confidence, the information requested below. Enclosed is a
business reply envelope for your convenience. Thank you for your courtesy.

Sincerely,

Name of Applicant: _____

1. Employed from _____ to _____ as _____ at wage or salary
of _____.
2. Did he drive motor vehicle for you? _____, Straight Truck? _____, Tractor-Semitrailer?
_____, Bus? _____. Other (Specify) _____.
3. Was he a safe and efficient driver? _____.
4. Reason for leaving your employ: Discharged _____; Resignation _____; Lay Off _____;
Military Duty _____.
5. Was his general conduct satisfactory? _____.
6. Please advise history of past driving record if available for past three years _____

MKIL40605

MK095015

(Over)

MKIL189606
McK00455

CONFIDENTIAL REPORT OF PERSONAL REFERENCE

Please indicate your opinion by placing a check (✓) in the appropriate column.

CHARACTERISTICS	EXCELLENT	GOOD	FAIR	POOR
Disposition. Tact, Ability to get along with others				
Initiative. Resourcefulness				
Safety Habits				
Driving Skill				
Attitude				
Loyalty				

Any known Physical Disabilities or Deformities _____

If above is yes, please comment _____

Any other remarks _____

SIGNATURE _____

TITLE _____

DATE _____

MKIL40606



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Form No. 17F

MK095016

MKIL189607
McK00456

RECORD OF ROAD TEST

(Check only those items on which the driver's performance is unsatisfactory. Explain unsatisfactory items under Remarks)

Driver's Name _____ Address: _____

License No. _____ State _____ Equipment Driven: Truck _____ Tractor _____ Trailer _____

Checked From _____ To _____ Date _____

PART 1 - PRE-TRIP INSPECTION AND EMERGENCY EQUIPMENT

Checks general condition approaching unit _____
Looks for leakage of coolants, fuel, lubricants _____
Checks under hood - oil, water, general condition of engine compartment, steering _____
Checks around unit - tires, lights, trailer hookup, brake and light lines, body, doors, horn, windshield wipers _____
Tests brake action, tractor protection valve, and parking (hand) brake _____
Knows use of jacks, tools, emergency warning devices: tire chains, fire extinguisher, spare fuses and four-way flashers _____
Checks instruments _____
Cleans windshield, windows, mirrors, lights, reflectors _____

PART 2 - PLACING VEHICLE IN MOTION AND USE OF CONTROLS

A. MOTOR _____
Starts motor without difficulty _____
Allows proper warm-up _____
Understands gauges on instrument panel _____
Maintains proper engine speed while driving _____
Basic knowledge of motors - gas, diesel _____
Abuse of motor _____
B. CLUTCH AND TRANSMISSION _____
Starts loaded unit smoothly _____
Uses clutch properly _____
Times gearshifts properly _____
Shifts gears smoothly _____
Uses proper gear sequence _____
C. BRAKES _____
Understands operating principles of air brakes _____
Knows proper use of tractor protection valve _____
Understands low air warning _____
Tests brakes before starting trip _____
D. STEERING _____
Tightens steering wheel _____
Allows truck to wander _____
Poor driving posture or poor grip on wheel _____

E. LIGHTS

Knows lighting regulations _____
Uses proper headlight beam _____
Dim lights when meeting or following other traffic _____
Adjusts speed to range of headlights _____
Proper use of auxiliary lights _____

PART 3 - COUPLING AND UNCOUPLING

Lines up units _____
Hooks brake and light lines properly _____
Secures trailer against movement _____
Backs under slowly _____
Tests hookup with power _____
Checks hookup visually _____
Handles landing gear properly _____
Proper hook-up of full trailer _____
Secures power unit against movement _____

PART 4 - BACKING AND PARKING

A. BACKING

Gets out and checks before backing _____
Looks back as well as uses mirror _____
Gets out and rechecks conditions on long back _____
Avoids backing from blind side _____
Signals when backing _____
Controls speed and direction properly while backing _____

B. PARKING (City)

Takes too many pull-ups _____
Hits nearby vehicles or stationary objects _____
Hits curb _____
Parks too far from curb _____
Fails to secure unit - set parking brake, put in gear, block wheels, shut off motor _____
Fails to check traffic conditions and signal when pulling out from parked position _____
Parks in illegal or unsafe location _____

C. PARKING (Road)

Parks off pavement _____
Avoids parking on soft shoulder _____
Uses emergency warning signals when required _____
Secures unit properly _____

MK095017

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MKIL189608

McK00457

PART 5 - SLOWING AND STOPPING

Uses gears properly ascending _____
 Gears down properly descending _____
 Stops and restarts without rolling back _____
 Tests brakes at top of hills _____
 Uses brakes properly on grades _____
 Uses mirrors to check traffic to rear _____
 Signals following traffic _____
 Avoids sudden stops _____
 Stops smoothly without excessive fanning _____
 Stops before crossing sidewalk when coming out of driveway or alley _____
 Stops clear of pedestrian crosswalks _____

PART 6 - OPERATING IN TRAFFIC PASSING AND TURNING**A. TURNING**

Gets in proper lane well in advance _____
 Signals well in advance _____
 Checks traffic conditions and turns only when way is clear _____
 Does not swing wide or cut short while turning _____

B. TRAFFIC SIGNS AND SIGNALS

Does not approach signal prepared to stop if necessary _____
 Violates traffic signal _____
 Runs yellow light _____
 Starts up too fast or too slow on green _____
 Fails to notice or heed traffic signs _____
 Runs "Stop" signs _____

C. INTERSECTIONS

Adjusts speed to permit stopping if necessary _____
 Checks for cross traffic regardless of traffic controls _____
 Yields right-of-way for safety _____

D. GRADE CROSSINGS

Adjusts speed to conditions _____
 Makes safe stop, if required _____
 Selects proper gear _____

E. PASSING

Passes with insufficient clear space ahead _____
 Passes in unsafe location: hill, curve, intersection _____
 Fails to signal change of lanes _____
 Fails to warn driver being passed _____
 Pulls out and back - uncertain _____
 Tailgates waiting chance to pass _____
 Blocks traffic with slow pass _____
 Cuts in too short returning to right lane _____

F. SPEED

Speed consistent with basic ability _____
 Adjusts speed properly to road, weather, traffic conditions, legal limits _____

Slows down for rough roads _____
 Slows down in advance of curves, intersections, etc. _____
 Maintains consistent speed _____

G. COURTESY AND SAFETY

Depends on others for safety _____
 Yields right-of-way for safety _____
 Fails to go ahead when given right-of-way by others _____
 Tends to crowd other drivers or force way through traffic _____
 Fails to allow faster traffic to pass _____
 Fails to keep right and in own lane _____
 Unnecessary use of horn _____
 Other discourtesy or improper conduct _____

PART 7 - MISCELLANEOUS**A. GENERAL DRIVING ABILITY AND HABITS**

Consistently alert and attentive _____
 Consistently aware of changing traffic conditions _____
 Adjusts driving to meet changing conditions _____
 Performs routine functions without taking eyes from road _____
 Checks instruments regularly while driving _____
 Willing to take instructions and suggestions _____
 Adequate self-confidence in driving _____
 Nervous, apprehensive _____
 Easily angered _____
 Complains too much _____
 Personal appearance, manner, cleanliness _____
 Physical stamina _____

B. HANDLING OF FREIGHT

Checks freight properly _____
 Handles and loads freight properly _____
 Handles bills properly _____
 Breaks down load as required _____

C. RULES AND REGULATIONS

Knowledge of company rules _____
 Knowledge of regulations: federal, state, local _____
 Knowledge of special truck routes _____

D. USE OF SPECIAL EQUIPMENT (Specify)

REMARKS:

GENERAL PERFORMANCE: Satisfactory _____; Needs Training _____; Unsatisfactory _____

QUALIFIED FOR: Truck _____; Tractor-Semitrailer _____; Other _____
(Specify)

MKIL40608



Signature of Examiner

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FORM NO. 13F

MK095018

MKIL189609

McK00458

CERTIFICATION OF WRITTEN EXAMINATION

CHEM OP 30.70 Exhibit 3

9/15/85

9/15/85

Page 1 of 1

Instructions to Carrier: If the examinee successfully completes the examination, the person who administered it shall advise him of the correct answers to any questions he failed to answer correctly and shall complete the certification of written examination in duplicate. The original of this certificate shall be retained by the motor carrier in the driver qualification file of the person who was examined with a list of the questions asked on the examination and the person's answers to those questions. Section 391.35 (d)(e)(1)(2)(3)

This is to certify that the person whose signature appears below has completed the written examination under my supervision in accordance with provisions of 391.35 of the Federal Motor Carrier Safety Regulations.

Signature of person taking examination

Date of examination

Location of examination

Signature of examiner

Title of examiner

Organization and address of examiner

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Book No. 88

CERTIFICATION OF ROAD TEST

Instructions to Carrier: If the road test is successfully completed, the person who gave it must complete the following certification in duplicate. The original of the signed road test form and the original of the Certification of Road Test shall be retained in the driver qualification file of the person who was examined, and duplicate copies provided to the person examined. Section 391.31 (e)(f)(g)(1)(2) of the Federal Motor Carrier Safety Regulations.

Driver's name _____ Social Security No. _____

Operator's or Chauffeur's License No. _____ State _____

Type of Power Unit _____ Type of Trailer(s) _____

This is to certify that the above-named driver was given a road test under my supervision on _____ 19_____ consisting of approximately _____ miles of driving.

It is my considered opinion that this driver possesses sufficient driving skill to operate safely the type of commercial motor vehicle listed above.

Signature of examiner

Title

Organization and address of examiner

MKIL40609

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Book No. 88

MK095019

MKIL189610

McK00459

BUREAU OF MOTOR CARRIER SAFETY
WRITTEN EXAMINATION FOR DRIVERS

Applicant _____

Date _____

Examiner _____

CHEM OP 30.70 Exhibit 9
9/15/85 9/15/85

1. 390.32 A motor carrier who is also a driver (owner-operator):

1. () is not covered by the safety regulations.
2. () must obey only those parts of the regulations which cover drivers.
3. () must obey only those parts of the regulations which cover motor carriers.
4. () must obey both the parts covering drivers and the parts covering motor carriers.

2. 391.11(b)(1) With only a few exceptions, the Federal Motor Carrier Safety Regulations say a driver must be:

1. () at least 18 years old.
2. () at least 19 years old.
3. () at least 20 years old.
4. () at least 21 years old.

3. 391.15(c)(2)(3) A driver cannot drive a motor vehicle:

1. () For one year after a first offense conviction for a felony involving a commercial motor vehicle he was driving.
2. () For one year after a first offense conviction for driving a commercial vehicle under the influence of alcohol or narcotics.
3. () For one year after a first offense conviction for leaving the scene of an accident which resulted in personal injury or death.
4. () For one year after a first offense conviction for any of the above.

4. 391.21(b)(7)(8)(10) Every driver applicant must fill out an application form giving:

1. () a list of all vehicle accidents he was in during the previous 3 years.
2. () a list of all of his motor vehicle violation convictions and bond forfeits (except for parking) during the previous 3 years.
3. () a list of names and addresses of all of his employers during the previous 3 years.
4. () all of the above.

5. 391.27(a)(b) At least once a year, a driver must fill out a form listing all motor vehicle violations (except parking) which he had during the previous 12 months. He must fill out the form:

1. () even if he had no violations.
2. () only if he was convicted.
3. () only if he was convicted or forfeited bond or collateral.
4. () only if the carrier requires it.

6. 391.33(a)(2) If a driver applicant has a valid certificate showing he passed a driver's road test:

1. () the carrier must accept it.
2. () the carrier may still require the applicant to take a road test.
3. () the carrier cannot accept it.
4. () the carrier may request a road test waiver from the Bureau of Motor Carrier Safety.

7. 391.41(b)(5) Persons with breathing problems which may affect safe driving:

1. () cannot drive.
2. () cannot drive unless the vehicle has an emergency oxygen supply.
3. () cannot drive unless another driver is along.
4. () cannot drive except on short runs.

8. 391.41(b)(7) Persons with arthritis, rheumatism, or any such condition which may affect safe driving:

1. () cannot drive unless they are checked by a doctor before each trip.
2. () cannot drive.
3. () cannot drive except when they are free of pain.
4. () cannot drive unless another driver is along.

9. 391.41(b)(8) Persons who have ever had epilepsy:

1. () cannot drive unless another driver is along.
2. () cannot drive.
3. () cannot drive on long runs.
4. () cannot drive without monthly medical examinations.

10. 391.41(b)(9)(12)(13) In order to be able to drive, a person:

1. () must not have any mental, nervous or physical problem likely to affect safe driving.
2. () must not use an amphetamine, narcotic or any habit-forming drug.
3. () must not have a current alcoholism problem.
4. () must not have or use any of the above.

11. 391.45(c) Any driver who gets an injury or illness serious enough to affect his ability to perform his duties:

1. () must report it at his next scheduled physical.
2. () cannot drive again.
3. () must take another physical and be recertified before driving again.
4. () must wait at least 1 month after recovery before driving again.

12. 392.2 A driver may not drive faster than posted speed limits:

1. () unless he is sick and must complete his run quickly.
2. () at any time.
3. () unless he is passing another vehicle.
4. () unless he is late and must make a scheduled arrival.

13. 392.3 When a driver's physical condition while on a trip requires that he stop driving, but stopping would not be safe, the driver:

1. () must stop anyway.
2. () may try to complete his trip, but as quickly as possible.
3. () may continue to drive to his home terminal.
4. () may continue to drive, but must stop at the nearest safe place.

14. 392.5(a)(1) A driver may not drink or be under the influence of any alcoholic beverage (regardless of alcoholic content):

1. () within 4 hours before going on duty or driving.
2. () within 6 hours before going on duty or driving.
3. () within 8 hours before going on duty or driving.
4. () within 12 hours before going on duty or driving.

15. 392.7 A driver must satisfy himself that service and parking brakes, tires, lights and reflectors, mirrors, coupling and other devices are in good working order:

1. () at the end of each trip.
2. () before the vehicle may be driven.
3. () only when he considers it necessary.
4. () according to schedules set by the carrier.



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FORM NO. 14F

MKIL189611
McK00460

16. 392.8 Which of the following must be in place and ready for use before a vehicle can be driven?

1. () at least one spare fuse or other overload protector of each type used on the vehicle.
2. () a tool kit containing a specified list of hand tools.
3. () at least one spare tire for every four wheels.
4. () a set of spark plugs.

17. 392.9(a)(3) If any part of the cargo or anything else blocks a driver's front or side views, his arm or leg movements, or his access to emergency equipment, the driver:

1. () can drive the vehicle, but must report the problems at the end of the trip.
2. () cannot drive the vehicle.
3. () can drive the vehicle, but only at speeds under 40 miles per hour.
4. () can drive the vehicle, but only on secondary roads.

18. 392.9(a) Any driver who needs glasses to meet the minimum visual requirements:

1. () must drive only during daylight hours.
2. () must always wear his glasses when driving.
3. () must always carry a spare pair of glasses.
4. () must not drive a motor vehicle.

19. 392.9(b) A driver may drive with a hearing aid:

1. () if he always has it turned on while he is driving.
2. () if he always carries a spare power source for it.
3. () if he can meet the hearing requirements when he has it turned on.
4. () if all of the above requirements are met.

20. 392.10(a) A driver required to stop at a railroad crossing should bring his vehicle to a stop no closer to the tracks than:

1. () 5 feet.
2. () 10 feet.
3. () 15 feet.
4. () 20 feet.

21. 392.10(a) Shifting gears is not permitted:

1. () when traveling faster than 35 miles per hour.
2. () when moving across any bridge.
3. () when crossing railroad tracks.
4. () when traveling down a hill steeper than 10 degrees.

22. 392.13 Drivers of motor vehicles not required to stop at drawbridges without signals:

1. () must drive at a rate of speed which will permit a stop before reaching the lip of the draw.
2. () must sound their horn before crossing.
3. () can proceed across without reducing speed.
4. () must slow down only if directed to by an attendant.

23. 392.15(a) A driver turning his vehicle should begin flashing his turn signal:

1. () at least 50 feet before turning.
2. () at least 60 feet before turning.
3. () at least 75 feet before turning.
4. () at least 100 feet before turning.

24. 392.16 Which of the following is true?

1. () if a seat belt is installed in the vehicle, a driver must have it fastened before beginning to drive.
2. () a driver may or may not use the seat belt, depending on his judgment.
3. () seat belts are not necessary on heavier vehicles.
4. () a driver must use his seat belt only if required to by the carrier.

25. 392.21 When a motor vehicle cannot be stopped off the traveled part of the highway, the driver:

1. () must keep driving.
2. () may stop, but shall get as far off the traveled part of the highway as possible.
3. () may stop, but shall make sure that the vehicle can be seen as far as possible to its front and rear.
4. () may stop if he has to, but should do both 2 and 3 above.

26. 392.22(b)(1) If a vehicle has a breakdown the driver must place one emergency signal:

1. () 100 feet in front of the vehicle in the center of the lane it occupies.
2. () 100 feet in back of the vehicle in the center of the lane it occupies.
3. () 10 feet in front or back of the traffic side.
4. () at all of the above locations.

27. 392.22(b)(1)(i) If a vehicle has a breakdown on a poorly-lit street or highway, the driver shall place on the traffic side:

1. () a reflective triangle.
2. () a lighted red electric lantern.
3. () a red reflector.
4. () any one of the above.

28. 392.22(b)(2)(iii) No emergency signals are required for a vehicle with a breakdown if the street or highway lighting is bright enough so it can be seen at a distance of:

1. () 100 feet.
2. () 200 feet.
3. () 500 feet.
4. () 750 feet.

29. 392.22(b)(2)(v) If a vehicle has a breakdown and stops on a poorly-lit *divided or one way* highway, the driver must place one emergency signal:

1. () 200 feet in back of the vehicle in the center of the lane it occupies.
2. () 100 feet in back of the vehicle on the traffic side of the vehicle.
3. () 10 feet in back of the vehicle on the traffic side of the vehicle.
4. () at all of the above locations.

30. 392.25 Lighted flame-producing emergency signals, including fuses:

1. () may not be used with vehicles carrying Class A or B explosives
2. () may not be used with tank vehicles, loaded or empty, which are used to carry flammable liquids or gas.
3. () may not be used with any vehicle using compressed gas as a fuel.
4. () may not be used with any of the above.

31. 392.30(a) A driver is required to have his lights on:

1. () from one-half hour before sunset to one-half hour before sunrise.
2. () from one-half hour before sunset to sunrise.
3. () from one-half hour after sunset to one-half hour before sunrise.
4. () from sunset to one-half hour before sunrise.

32. 392.32(a)(b) When lights are required on the open highway, a driver shall use the high beam:

1. () except when within 500 feet of an on-coming vehicle or a vehicle he is following.
2. () except when within 400 feet of an on-coming vehicle or a vehicle he is following.
3. () except when within 200 feet of an on-coming vehicle or a vehicle he is following.
4. () except when within 100 feet of an on-coming vehicle or a vehicle he is following.

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33. 392.32(a) When lights are required, drivers may use lower beam lights:

1. () when fog, dust or other such conditions exist.
2. () when approaching tunnels or bridges.
3. () when driving on one way highways.
4. () when within 1,000 feet of business areas or where people live.

34. 392.40 Every driver involved in an accident must follow the Safety Regulation procedures whenever an injury or death is involved or if:

1. () the accident is caused by the driver and property damage of over \$250.00 results.
2. () property damage of over \$250.00 results, no matter who is at fault.
3. () property damage of over \$100.00 results.
4. () property damage of any kind results.

35. 392.41 If a driver strikes a parked vehicle, he should first:

1. () stop and call the local police.
2. () stop and call his carrier.
3. () stop and try to find the driver or owner of the parked vehicle.
4. () stop and estimate the damage.

36. 392.42 When a driver receives notice that his operator's license or permit has been revoked, suspended, or withdrawn, he must:

1. () notify his carrier within 72 hours.
2. () notify his carrier within one week.
3. () notify his carrier before the end of the next business day.
4. () take no action since his carrier will also get a notice.

37. 392.61 Except in emergencies, no driver shall allow his vehicle to be driven by any other person:

1. () except those he knows can drive it.
2. () except on roads with little or no traffic.
3. () except those allowed by the carrier to do it.
4. () unless he goes along with the person driving.

38. 392.64 A person may ride inside a vehicle's closed body or trailer:

1. () only on short runs.
2. () only if there is an easy way to get out from the inside.
3. () only if the inside of the body or trailer is lighted.
4. () only if there is no cargo in it.

39. 392.66 If carbon-monoxide is inside a vehicle or if a mechanical problem may produce a carbon-monoxide danger, the vehicle:

1. () may be sent out and driven so long as the windows are left open.
2. () may not be sent out or driven.
3. () may be sent out and driven only if the carrier decides the vehicle has to be used.
4. () may be sent out and driven on short runs.

40. 392.68 No motor vehicle shall be operated out of gear:

1. () except when fuel must be saved.
2. () except on hills which are less than 20 degrees.
3. () except when it is necessary for stopping or shifting gears.
4. () except when the vehicle's speed is under 25 miles per hour.

41. 393.1(a) Under the Federal Motor Carrier Safety Regulations, no vehicle may be driven:

1. () until a list of all missing or defective equipment has been prepared and given to the carrier.
2. () until all equipment has been inspected and replacements for defective parts have been ordered.
3. () unless all missing equipment is to be replaced no later than the end of the vehicle's next run.
4. () until it meets all of the equipment requirements of the Regulations.

42. 393 various Minimum requirements for lighting, reflecting and electrical equipment and devices on buses and trucks:

1. () are set by the vehicle makers.
2. () are set by the National Safety Council.
3. () are specified in the Safety Regulations.
4. () are set by the trucking associations.

43. 393.18(a)(b) Every motor vehicle which has a load sticking out over its sides must be specifically marked with flags and lamps. Additional flags and lamps must be added if the load or tailgate sticks out beyond the rear of the vehicle by more than:

1. () 2 feet.
2. () 4 feet.
3. () 6 feet.
4. () 8 feet.

44. 393.41(a) Every vehicle shall have a parking brake system which will hold it, no matter what its load:

1. () on any grade on which it is operated which is free from ice and snow.
2. () on all grades under 15 degrees which are free from ice and snow.
3. () on all grades under 20 degrees which are free from ice and snow.
4. () on all grades under 25 degrees which are free from ice and snow.

45. 393.77(b)(6) A portable heater may not be used in any vehicle cab:

1. () unless it is secured.
2. () unless it is of the electric filament type.
3. () at any time.
4. () without approval from the carrier.

46. 395.3(a) Drivers are not generally allowed to drive for more than:

1. () 6 hours following 8 straight hours off duty.
2. () 8 hours following 8 straight hours off duty.
3. () 10 hours following 8 straight hours off duty.
4. () 12 hours following 8 straight hours off duty.

47. 395.3(a) Most drivers of large vehicles are not allowed to drive:

1. () after they have been on duty for 16 hours.
2. () after they have been on duty for 15 hours.
3. () after they have been on duty for 14 hours.
4. () after they have been on duty for 12 hours.

48. 395.3(b) Generally, a driver may not be "on duty":

1. () for more than 40 hours in any 7 straight days.
2. () for more than 50 hours in any 7 straight days.
3. () for more than 60 hours in any 7 straight days.
4. () for more than 70 hours in any 7 straight days.

49. 395.7 When a driver is riding in a vehicle, but is not driving and has no other responsibility, such time shall be counted as:

1. () on-duty time.
2. () on-duty time unless he is allowed 8 straight hours off duty when he gets to the destination.
3. () on-duty time unless he is allowed 6 straight hours off duty when he gets to the destination.
4. () on-duty time unless he is allowed 4 straight hours off duty when he gets to the destination.

50. 395.8(b) Every driver must prepare an original and one copy of a daily log which he must keep current by updating it:

1. () every time he changes a duty status.
2. () every 24 hours.
3. () every 8 hours.
4. () at the end of each trip.

51. 395.8(c) Except for the name and main address of the carrier, all entries in a log:

1. () must be printed in ink or typed.
2. () must be made by the carrier dispatcher.
3. () must be made in front of a witness.
4. () must be written in the driver's own handwriting.

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52. 395.8(1)(p)(q) Which of the following is not to be put in a driver's log?

1. () Time spent in a sleeper berth.
2. () Total hours in each duty status.
3. () The name of the carrier or carriers.
4. () The name and make of his vehicle.

53. 395.11 If an emergency delays a run which could normally have been completed within hours of service limits, the driver:

1. () must still stop driving when the hours of service limit is reached.
2. () may drive for 1 extra hour.
3. () may drive for 2 extra hours.
4. () may finish his run without being in violation.

54. 395.13 Any driver declared "Out of Service":

1. () must take a road test before driving again.
2. () must wait 72 hours before driving again.
3. () must appeal to the Director of the Bureau of Motor Carrier Safety to drive again.
4. () can drive again only after hours of service requirement are met.

55. 396.4 If a vehicle on a trip is in a condition likely to cause an accident or breakdown:

1. () the driver should report it at the end of his run so repairs can be made.
2. () the driver should drive at lower speeds for the rest of the run.
3. () the driver should stop immediately unless going on to the nearest repair shop is safer than stopping.
4. () the driver should change his route so as to get away from heavily traveled roads.

56. 396.5(c) If authorized Federal inspectors find a vehicle which is likely to cause an accident or breakdown:

1. () it will be reported to the carrier for repair as soon as the vehicle is not scheduled.
2. () it will be reported to the carrier for repair at the end of the trip.
3. () it will be marked with an "Out of Service Vehicle" sticker and not driven until repairs are made.
4. () the driver will be held responsible and declared "Out of Service."

57. 396.5(c)(4) If the driver makes his own repairs on an "Out of Service" vehicle:

1. () his work must be approved by a mechanic.
2. () he must complete and sign a "Certification of Repairman" form himself.
3. () his work must be approved by his supervisor.
4. () his work must be approved by a Federal inspector.

The following questions must be answered by Drivers involved in the transportation of Hazardous Materials.

58. 397.3 Department of Transportation Regulations covering the driving and parking of vehicles containing hazardous materials:

1. () replace State and local laws.
2. () prevent States and cities from having their own laws.
3. () must be obeyed even if State or local laws are less strict or disagree.
4. () should not be obeyed if State or local laws disagree.

59. 397.5(c) A vehicle which contains hazardous materials other than Class A or B explosives must be attended at all times:

1. () by the driver.
2. () by the driver except when he is involved in something else necessary to his duties as a driver.
3. () by the driver or a person chosen by the driver.
4. () by the driver or a police officer.

60. 397.5(d)(1). A vehicle containing Class A or B explosives or other hazardous materials on a trip is "attended":

1. () when the person in charge is anywhere within 100 feet of it.
2. () as long as the driver can see it from 200 feet away.
3. () when the person in charge is within 100 feet and has a clear view of it.
4. () when the person in charge is resting in the berth.

61. 397.7(a)(3) Except for short periods when operations make it necessary, trucks carrying Class A or B explosives cannot be parked any closer to bridges, tunnels, building or crowds of people than:

1. () 50 feet.
2. () 100 feet.
3. () 200 feet.
4. () 300 feet.

62. 397.13(a) Smoking or carrying a lighted cigarette, cigar or pipe near a vehicle which contains explosives, oxidizing or flammable materials is not allowed:

1. () except in the closed cab of the vehicle.
2. () except when the vehicle is moving.
3. () except at a distance of 25 feet or more from the vehicle.
4. () except when approved by the carrier.

63. 397.15(a)(b) When a vehicle containing hazardous materials is being fueled:

1. () no person may remain in the cab.
2. () a person must be in control of the fueling process at the point where the fuel tank is filled.
3. () the area within 50 feet of the vehicle must be cleared.
4. () the person who controls the fueling process must wear special clothes.

64. 397.17(a) If a vehicle carrying hazardous materials is equipped with dual tires on any axle, the driver must examine the tires:

1. () at all fueling stops only.
2. () only at the end of each day or tour of duty.
3. () at the beginning of each trip and each time the vehicle is parked.
4. () at the beginning of each trip only.

65. 397.17(c) If a driver of a vehicle carrying hazardous materials finds a tire which is overheated, he must:

1. () wait for the overheated tire to cool before going on.
2. () remove and replace the overheated tire, store it on the vehicle and drive on.
3. () remove the tire, place it a safe distance from the vehicle and not drive the vehicle until the cause of the overheating is fixed.
4. () drive slowly to the nearest repair shop and have the cause of the overheating fixed.

66. 177.823(a)(3) When required, specified hazardous materials markings or signs must be placed:

1. () wherever they can be seen clearly.
2. () on the sides and rear of the vehicle.
3. () on the front, rear and sides of the vehicle.
4. () on the front and rear bumpers of the vehicle.

SCORING KEY WRITTEN EXAMINATION

Section:	Answer:	Section:	Answer:
(1) 390.32	4	(34) 392.40	4
(2) 391.11(b)(1)	4	(35) 392.41	3
(3) 391.15(c)(2)(3)	4	(36) 392.42	3
(4) 391.21(b)(7)(8)(10)	4	(37) 392.61	3
(5) 391.27(a)(b)	1	(38) 392.64	2
(6) 391.33(2)	2	(39) 392.66	2
(7) 391.41(b)(5)	1	(40) 392.68	3
(8) 391.41(b)(7)	2	(41) 393.1(a)	4
(9) 391.41(b)(8)	2	(42) 393 various	3
(10) 391.41(b)(9)(12)(13)	4	(43) 393.18(a)(b)	2
(11) 391.45(c)	3	(44) 393.41(a)	1
(12) 392.2	2	(45) 393.77(b)(6)	3
(13) 392.3	4	(46) 395.3(a)	3
(14) 392.5(a)(1)	1	(47) 395.3(a)	2
(15) 392.7	2	(48) 395.3(b)	3
(16) 392.8	1	(49) 395.7	2
(17) 392.9(a)(3)	2	(50) 395.8(b)	1
(18) 392.9(a)	2	(51) 395.8(c)	4
(19) 392.9(b)	4	(52) 395.8(1)(p)(q)	4
(20) 392.10(a)	3	(53) 395.11	4
(21) 392.10(a)	3	(54) 395.13	4
(22) 392.13	1	(55) 396.4	3
(23) 392.15(a)	4	(56) 396.5(c)	3
(24) 392.16	1	(57) 396.5(c)(4)	2
(25) 392.21	4	(58) 397.3	3
(26) 392.22(b)(1)	4	(59) 397.5(c)	2
(27) 392.22(b)(1)(i)	4	(60) 397.5(d)(1)	3
(28) 392.22(b)(2)(iii)	3	(61) 397.7(a)(3)	4
(29) 392.22(b)(2)(v)	4	(62) 397.13(a)	3
(30) 392.25	4	(63) 397.15(a)(b)	2
(31) 392.30(a)	3	(64) 397.17(a)	3
(32) 392.32(a)(b)	1	(65) 397.17(c)	3
(33) 392.32(a)	1	(66) 177.823(a)(3)	3



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Form No. 14F-a
(1 per 100 Form No. 14F)

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MKIL189615
McK00464

DRIVER DATA SHEET
For Casuals, New Hires & Temporary Employees

CHEM OP 30.70 Exhibit 11
9/15/85 9/15/85
Page 1 of 1

Name (Print) _____

Social Security Number _____

Motor Vehicle Operator's License Number _____

Type of License _____ Issuing State _____

Instructions: Motor carriers when using a driver for the first time or intermittently shall obtain from the driver a signed statement giving the total time on duty during the immediately preceding 7 days and time at which such driver was last relieved from duty prior to beginning work for such carrier. Rule 395.8(r) Federal Motor Carrier Safety Regulations.

DAY	1	2	3	4	5	6	7	TOTAL
DATE								
HOURS WORKED								

I hereby certify that the information given above is correct to the best of my knowledge and belief, and that I was last relieved from work at _____ on _____
Time (Day) (Month) (Year)

(Signature) _____

Witness: _____ DATE _____
Company Representative

EMPLOYMENT CHECK LIST FOR INTERMITTENT, CASUAL OR OCCASIONAL DRIVER

The qualification file for an intermittent, casual, or occasional driver employed under the rules in Sec. 391.63 must include the following forms as per Section 391.51(d) Federal Motor Carrier Safety Regulations.

- 1. Medical Examiner's Certificate-** The medical examiner's certificate of his physical qualification to drive a motor vehicle or a legible photographic copy of the certificate.
Published by: J J Keller & Associates, Inc. - Neenah, Wisconsin Book No. 2 B
- 2. Certificate of Driver's Road Test-** The certificate of driver's road test issued to the driver pursuant to Sec. 391.31(e), or a copy of the license or certificate which the motor carrier accepted as equivalent to the driver's road test pursuant to Sec. 391.31.
Published by: J J Keller & Associates, Inc. - Neenah, Wisconsin Form No. 11 F
- 3. Certificate of Written Examination, Questions and Answers-** The questions asked, the answers the driver gave, and the certificate of written examination issued to him pursuant to Sec. 391.35, or a copy of a certificate which the motor carrier accepted as equivalent to a written examination pursuant to Sec. 391.37.

Published by: J J Keller & Associates, Inc. - Neenah, Wisconsin Form No. 11 F



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MKIL40615

Form No. 10 F

MK095025

MKIL189616
McK00465

CERTIFICATION OF ROAD TEST

Driver's Name _____
Social Security No. _____
Operator's or Chauffeur's License No. _____
State _____
Type of Power Unit _____
Type of Trailer(s) _____
If Passenger Carrier, Type of Bus _____
This is to certify that the above-named driver was given a road test under my supervision on _____
19____ consisting of approximately _____ miles of driving.
It is my considered opinion that this driver possesses sufficient driving skill to operate safely the type of commercial motor vehicle listed above.
Signature of examiner _____ Title _____
Organization and address of examiner _____

Card No. 6B-C (RT)

CERTIFICATE OF WRITTEN EXAMINATION

This is to certify that the person whose signature appears below has completed the written examination under my supervision in accordance with provisions of 391.35 of the Federal Motor Carrier Safety Regulations.

Signature of person taking examination _____ Date of examination _____
Location of examination _____
Signature of examiner _____ Title of examiner _____
Organization and address of examiner _____

Card No. 6B-C (WE)

MOTOR CARRIER

MEDICAL EXAMINER'S CERTIFICATE

DRIVER'S NAME - (Print) _____
I, in accordance with the Federal Motor Carrier Safety Regulations (49 CFR 391.41-391.49) and with knowledge of his duties, find him qualified under the regulations.
☐ Qualified only when wearing corrective lenses
☐ Qualified only when wearing a hearing aid
A completed examination form for this person is on file in my office at _____
ADDRESS _____
(DATE OF EXAMINATION) _____ (NAME OF EXAMINING DOCTOR - Print) _____
(SIGNATURE OF EXAMINING DOCTOR) _____
(SIGNATURE OF DRIVER) _____
(ADDRESS OF DRIVER) _____

Card No. 2B-C

DRIVER QUALIFICATION & IDENTIFICATION CERTIFICATE

NAME OF DRIVER _____ IS NO _____
SIGNATURE OF DRIVER _____
I certify that the above named driver, as defined in Sec. 391.3(c) is regularly driving a vehicle operated by the below named carrier and is fully qualified under Part 391, Federal Motor Carrier Safety Regulations. His current medical examiner's certificate expires on _____ DATE _____
This certificate expires: _____
DATE NOT LATER THAN EXPIRATION DATE OF MEDICAL CERTIFICATE
Issued by _____ Issued on _____ DATE _____
NAME OF CARRIER _____
ADDRESS _____
SIGNATURE _____ TITLE _____

Card No. 7B-C

PLEASE HAVE YOUR REPRESENTATIVE CALL ME ABOUT THESE

- ☐ TRUCK PERMITTING SERVICE
- ☐ UNIT TAX ANALYSIS SYSTEM
- ☐ PERIODIC REPORTING SERVICE
- ☐ EMERGENCY PERMITS
- ☐ EXEMPT AUTHORITY PERMITS
- ☐ DRIVERS' LOG SURVEY
- ☐ PERMIT SURVEY
- ☐ SPECIAL SURVEYS
- ☐ OTHER (Specify) _____

NAME _____
ADDRESS _____
CITY _____ STATE _____
ZIP _____ PHONE (AC) _____

J.J. KELLER & ASSOCIATES, INC.
145 W. WISCONSIN AVE. - NEENAH, WISCONSIN 54956
● Phone 800-558-5011 Toll Free ●
800-558-5012

PLEASE SEND ME MORE INFORMATION ABOUT THESE

- ☐ TRUCKING SAFETY GUIDE
- ☐ TRUCKING PERMIT GUIDE
- ☐ NATIONAL BACKHAUL GUIDE
- ☐ LEASING GUIDE
- ☐ INTERSTATE MOTOR CARRIER FORMS MANUAL
- ☐ MOTOR CARRIER SAFETY REGULATIONS HANDBOOK
- ☐ TRUCK BROKER DIRECTORY
- ☐ MOTOR CARRIER SAFETY REPORT SERIES
- ☐ VEHICLE SIZES & WEIGHTS MANUAL
- ☐ DRIVERS GUIDE TO LOW UNDERPASSES
- ☐ EMERGENCY & TRIP PERMIT HANDBOOK
- ☐ D.O.T. PERSONNEL & SAFETY FORMS
- ☐ COMPLETE QUALIFICATION FILE PACKET
- ☐ DRIVERS' SAFETY POCKETBOOK
- ☐ STOCK LOG BOOKS
- ☐ IMPRINTED LOG BOOKS
- ☐ CUSTOM LOG BOOKS
- ☐ VEHICLE INSPECTION REPORT BOOKS
- ☐ VEHICLE MAINTENANCE RECORD
- ☐ PADDED BILLS OF LADING
- ☐ SNAPOUT BILLS OF LADING
- ☐ LOG ENVELOPES

NAME _____
ADDRESS _____
CITY _____ STATE _____
ZIP _____ PHONE (AC) _____

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FIRST CLASS
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McK00467

McKesson

Operations

Section	Reference	Page	End
TRANSPORTATION	30.75	1	
Subject	Issue Date	Effective Date	
PROCEDURES FOR COLD WEATHER STARTING	9/15/85	9/15/85	

GENERAL

Good maintenance and inspections are a must throughout the year to keep transportation equipment safe and in top running condition. Winter preparation, in reality, is nothing more than an extension of year-round maintenance and common sense. (See Exhibit 1, for Basic Winterizing Checklist.)

Additional steps are required to assure an engine starts well and runs efficiently in cold weather conditions. Many authorities say up to 90% of engine wear occurs during start-up when moving parts are not adequately lubricated. In cold weather when oil is stiff and doesn't flow freely, the problem is worse.

The regular maintenance shop should give special attention to systems, particularly:

- air intake
- cooling
- electrical, especially batteries
- engine lubrication
- fuel

When parking a truck for an extended period of time at an outside dock where it's exposed to severe wind and cold, make a 3-1/2' - 4' protective shield for the front sides of the truck.

DIESEL ENGINE PROCEDURES

For diesel engines, try normal starting procedures in cold weather as follows:

1. Apply parking brake.
2. Make sure transmission shift lever is in neutral position.
3. Fully depress clutch; do not pump accelerator.
4. Try starting a reasonable number of times.
(Make certain manufacturer's instructions concerning cranking time are followed. Most do not recommend cranking continuously for more than 30 or 40 seconds without stopping to let the solenoid cool for one or two minutes.)

MKIL40618

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McKesson

Operations

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TRANSPORTATION	30.75	2	
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PROCEDURES FOR COLD WEATHER STARTING	9/15/85	9/15/85	

DIESEL ENGINE PROCEDURES (Cont.)

5. Do not race engine to speed warm up. Do not run engine at more than 900 RPM until normal operating temperatures are reached. Also avoid long periods of idling as fuel returning from injectors forms condensate that winds up in fuel tank. Keep fuel tanks full at the end of run if vehicle will be left standing for an extended period of time as moisture will condense in a nearly empty tank.

STARTING FLUID. If engine fails to start and battery is strong, then starting fluids can be used, but only if absolutely necessary. They must be used with caution.

On vehicles with starting fluid cup, one 7cc capsule can be used during above zero temperatures, or two 7cc capsules when temperature is below zero. Force capsule(s) down onto painted tube in cup, and immediately start engine by the usual method.

If a pressurized spray-type starting fluid is used, a moderate amount should be directed into inlet areas of air-cleaner. No smoking while using starter fluids. Be careful not to inject too much ether into engine, because ether causes cylinder liner scuffing, or an explosion that could damage engine.

ENGINE HEATER. Preheating for engine coolant, battery and oil sump is a valuable starting aid. Except in severe cold conditions, engine or coolant preheating is usually sufficient for year-round starting.

Small fleets and single truck operations usually have no difficulty running heavy duty extension cords to their vehicles. Larger Service Centers may require a separate wiring system to stations where individual units may be plugged in. (Be certain that a competent electrician checks that circuits are adequate for the wattage requirements. Also, it is a good idea to stay with 115 volt heaters, particularly for vehicles in over-the-road service, since few 230 volt outlets may be found at hotels or other overnight locations. See Manufacturer's Wattage Recommendations, Exhibit 2.)

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McKesson
Operations

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PROCEDURES FOR COLD WEATHER STARTING	9/15/85	9/15/85	

DIESEL
ENGINE
PROCEDURES
(Cont.)

Engine heaters may be obtained as an option when ordering new vehicles, or may be added to existing units. Follow the recommendations of vehicle manufacturer, or contact Regional Operations Manager.

An important goal is to reduce the downtime required for slow starting vehicles and warmup. Pre-heating, with the engine block at or near normal operating temperature, means the truck is ready to roll when the driver climbs in. The cab heater is also ready to operate.

GAS ENGINE
PROCEDURES

Use normal starting procedures to start the engine.

1. Apply parking brake.
2. Make sure transmission shift lever is in neutral position.
3. Fully depress clutch, partially choke, or one pump on the accelerator, then hold halfway, as key is turned on.

STARTING FLUID. If engine fails to start after a reasonable number of times, and battery is strong, the pressurized spray-type ether starting fluid can be used. A moderate amount should be directed into inlet area of air-cleaner. Caution: If too much ether is injected into engine, it can cause cylinder scuffing, or an explosion that could damage engine. No smoking while using starter fluids.

Engine should be allowed to run just above idle until normal temperatures are reached. Never race engine to speed warmup.

ENGINE HEATER. Follow same instructions as for Diesel Engines, page 2, this subject, and Exhibit 2.

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WINTERIZING CHECKLIST

This is a basic list of items to check before winter begins.

FOR BETTER VISION

- All lights: function and aim
- Fog-driving lights
- Heater-defroster effective
- Mirrors: secure and clean
- Glass: free of cracks or discoloration
- Wiper motor and blade function

MECHANICAL CONDITION

- Fuel: right type
- Filter maintenance
- Water removal from air, lube, fuel systems
- Electrical: charge rate o.k.
- Batteries: electrolyte, cables, tiedowns
- Antifreeze: inhibitor levels o.k.
- Lubrication: proper specs for winter
- Starting aids
- Fan, shutter, thermostat
- Starter system

GENERAL

- Jumper cables
- Tire chains, tensioners and repair links
- Winter front
- Cab insulation, i.e., weather stripping
- Exhaust system leaks
- Window mechanisms

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ENGINE HEATER SELECTION GUIDE
Manufacturer's Wattage Recommendations for Various Temperatures Under Normal Conditions

To maintain optimum operating temperatures use
3 Watts/Cu. In. to -20° F
5 Watts/Cu. In. Below -20° F

Desired Temperatures Based at 0° Fahrenheit	Gas Engines of 1 & 2 Cylinders	Gas Engines Up to 350 Cu. In. Displacement	Gas Engines of 350-600 Cu. In. Displacement	Gas Engines of 600-800 Cu. In. Displacement	Gas Engines of 800-1200 Cu. In. Displacement	Gas Engines Over 1200 Cu. In. Displacement
		Diesel Engines of 2 & 3 Cylinders and Small 4 Cylinders	Diesel Engines of 4 Cylinders	Diesel Engines of 6 Cylinders	Automotive Diesel Engines of 7-12 Cylinders	
60° F	500	750	1000	1500	2000	5000
			1000	1500	2000	4000
60° F to 80° F	500	750	1000	1500	2000	6000
			1000	1500	2000	4000
80° F to 100° F	500	750	1000	2000	2500	6000
			1000	2000	2500	4000
100° F to 120° F	5000	750	1000	2000	2500	9000
			1000	2000	2500	4000
120° F to 140° F	500	750	1000	2000	4000	9000
			1000	2500	2500	4000
140° F to 160° F	750	1000	1500	2500	4000	9000
			1500	2500	2500	4000
160° F to 180° F	750	1000	1500	2500	4000	12000
			1500	2500	4000	4000

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McK00472

McKesson Operations

Section	Reference	Page	End
TRANSPORTATION	30.80	1	X
Subject	Issue Date	Effective Date	
TRANSFER OF CHEMICAL PRODUCTS: TWO MAN RULE	6/30/86	6/30/86	

POLICY

1. There must be two active participants in any bulk loading/unloading or product repackaging, including transfers occurring during the weekend.
2. Participants, including truck drivers, MUST have visual contact with and be accessible to the transfer process to facilitate emergency response.
3. If the transfer involves products loading/unloading packaged freight, it is permissible to have only one active participant.

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